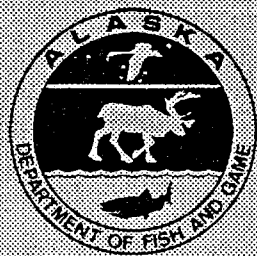
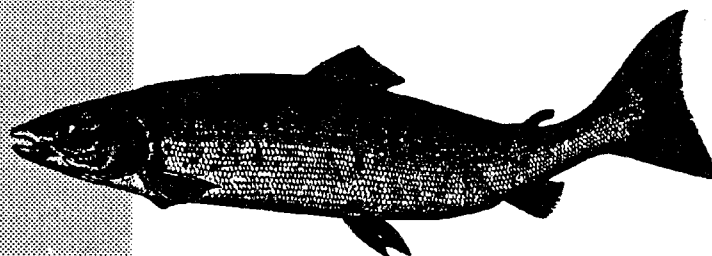

FINFISH

1993

Report to the Board of Fisheries



*Regional Information Report No. 1/93-28
December 1993*

*Alaska Department of Fish and Game
Commercial Fisheries Management
and Development Division
Juneau, Alaska
Region 1*

REGION 1
FINFISH FISHERIES
1993 REPORT TO THE BOARD OF FISHERIES



Regional Information Report No.¹ 1J93-28

Alaska Department of Fish and Game
Division of Commercial Fisheries Management and Development
Juneau, Alaska

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REPORT TO THE BOARD OF FISHERIES
INTRODUCTION TO THE 1993 FINFISH FISHERIES



By

Marc S. Pritchett

Alaska Department of Fish and Game
Commercial Fisheries Management and Development Division
Juneau, Alaska

December 1993

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INTRODUCTION

This report provides a general overview of the 1993 Region I salmon and herring fisheries. Southeast Alaska salmon fisheries harvest all five species of Pacific salmon. Preliminary estimates indicate that the 1993 or 1992/93 Region 1 seasonal landings were worth an exvessel value of at least \$92,250,000. This value consisted of approximately \$88,300,000 for salmon and \$3,950,000 for herring.

Description of the Southeast Region

The Southeast Region consists of Alaskan waters between Cape Suckling on the north and Dixon Entrance on the south (Figure 1). The region is divided into two herring and salmon net registration areas; Area A, the Southeast Alaska area, extends from Dixon Entrance to Cape Fairweather and Area D, the Yakutat area, extends from Cape Fairweather to Cape Suckling. By regulation, the Yakutat Area is divided into the Yakutat District, extending from Cape Fairweather to Icy Cape, and the Yakataga District extending westward from Icy Cape to Cape Suckling (Figure 2). The Southeast Alaska Area is divided into 17 regulatory districts - Districts 1-16 and the Dixon Entrance District (Figure 3). Some districts are further divided into regulatory sections.

For management and administrative purposes the region is divided into six management areas with area offices in Juneau, Ketchikan, Petersburg, Sitka, Haines, and Yakutat (Figure 1). Additionally, a department office is also maintained in Wrangell, for the Petersburg area.

Fisheries Management Organization

Management of the Region I commercial and subsistence finfish fisheries is accomplished via coordination of the area management biologists and overall regional management biologists. There are six area management biologists in Region I, corresponding to the six area management offices. Each area biologist is primarily responsible for the management of the commercial salmon net, herring and subsistence fisheries in his respective management area. Management of the groundfish, shellfish, and salmon troll fisheries is accomplished by management biologists with regional responsibility. Because of the movement of fish and fishermen between the various management areas, there is a closely coordinated regional management approach for every fishery.

SALMON FISHERIES

Commercial utilization of the Southeast Alaska salmon resources began in the late 1870s. Until the early 1900s, sockeye salmon was the primary species harvested. Pink salmon began to dominate the catch in the early 1900s and, in recent years, pinks have comprised 75% to 90% of the region's total salmon catch. The relative order of production (in numbers of fish) from highest to lowest is usually pink, chum, coho, sockeye and king salmon.

The harvest of salmon in Southeast Alaska peaked in the late 1930s and early 1940s and declined to historic low levels in the 1950s and early 1960s. During the mid to late 1960s improved catches occurred, but in the early 1970s another decline in production was experienced. The recent trend has been for increased production levels. The consecutive 30-year high annual total commercial harvest of salmon occurred from 1915 through 1944, when the average annual harvest was approximately 39,000,000 fish. The most recent 5-year average harvest (1989-'93) was 59,000,000.

Fishery Characteristics

Salmon are commercially harvested in the Southeast Area (Area A) with purse seines, drift gillnets, floating fish traps, and hatchery cost recovery; in the Yakutat area (Area D) with setnets; and, in both areas with hand and power troll gear. The salmon net fisheries are confined to state waters; however, the troll fishery operates in both state waters and in the federal waters of the Exclusive Economic Zone (EEZ). The use of floating fish traps is restricted to the Annette Islands Fishery Reserve, established by Presidential Proclamation in 1916.

The region's salmon fisheries are extremely complex due to the mixed stock and mixed species nature of the returns, and to the existence of several distinct gear groups harvesting the same stocks of salmon. The Southeast Region contains over 2,500 salmon streams with various productivity levels, and it is difficult to apply stock-specific fisheries management according to the run strength of individual returns. Additionally, some salmon harvested in the region originate from other states (primarily Washington and Oregon) and Canada. Often, a fishery targeting on a specific salmon species incurs major incidental catches of other species.

Fishery Participation

According to preliminary information from the Commercial Fisheries Entry Commission, 408 purse seine, 480 drift gillnet, 167 set gillnet, 934 power troll, and 1,276 hand troll permits were renewed and could have fished in 1992 (Table 1). Preliminary fish ticket information indicates that a total of 2,456 permits,

including 394 purse seine, 464 drift gillnet, 160 set gillnet, 839 power troll, and 599 hand troll permittees reported salmon landings. Fish traps authorized on Annette Island Reserve also reported landings.

Salmon Harvest

The Southeast Alaska region's commercial salmon harvest by all gear types, including hatchery cost recovery, totaled over 71,800,000 fish in 1993 (Tables 2 and 3). This was the highest catch since statehood and exceeds the 1991 record harvest by over 1,000,000 salmon.

The harvest of approximately 57,200,000 pink salmon was only 8% less than the record 1991 catch (approximately 62,000,000) and exceeds the last 5-odd year average of 44,000,000 by 29%. Pink salmon accounted for 80% of the 1993 salmon catch. Region-wide landings of 3,200,000 sockeye and over 7,600,000 chum salmon were the highest reported since Alaska statehood in 1959. Landings of almost 3,600,000 coho were the second highest since statehood, only 3% less than the record catch set in 1992.

The 1993 commercial catch of chinook salmon was 278,800 fish, including those caught in the winter troll fishery from October 4, 1992 through April 14, 1993. This was approximately 16% more than caught in 1992, and approximates the last consecutive 10-year average of 278,421.

Harvest by Gear Type

The 1993 Southeast Alaska salmon catch by gear type and species is summarized in Tables 4-9. Salmon landed by purse seine gear accounted for 84% of the total salmon catch, followed by troll at 6%, and drift gillnet at 5%. Troll gear accounted for 80% of the region's landings of chinook salmon and 67% of the coho salmon harvest. Purse seine fisheries harvested 93% of the pink, 60% of the chum, and 53% of the region's sockeye salmon harvest. Drift gillnet gear accounted for 32% of the sockeye, 18% of the chum, 12% of the coho, and 2% of the pink salmon harvest. The set gillnet landings of sockeye and coho salmon represented 11% and 7% of the regional harvest of these species, respectively. The trap catch of pink salmon was less than 1% of the total Region 1 pink salmon landings. Approximately 8% of the chinook, 14% of the chum, 1% of the pink, and 1% of the overall coho salmon harvest was taken during hatchery controlled fisheries. The hatchery controlled harvest of chum salmon was the largest recorded and 34% greater than the 1992 record.

Exvessel Value

The exvessel value of the 1993 Southeast Alaska regional commercial salmon harvest was estimated at approximately \$88,300,000 (Table 10). This estimate is considered conservative as it is based on the price reported on fish tickets and does not include unreported price adjustments, or situations where price

information was not reported. The actual exvessel value, which may be from 10% to 20% higher, will not be known until final processor reports are received and analyzed.

The regional, all-gear harvest of pink salmon was valued at \$23,800,000, followed by chum salmon (\$22,400,000), coho salmon (\$19,300,000), sockeye (\$15,700,000), and chinook (\$7,000,000). The exvessel value was highest for purse seine gear (\$44,700,000), followed by troll (\$22,600,000), drift gillnet (\$13,400,000), hatchery controlled (\$3,100,000), and set gillnet (\$2,800,000).

HERRING FISHERIES

The total regional commercial herring harvest was 12,096 tons, an increase from the previous year's harvest of 9,414 tons. Total exvessel value was approximately \$3,947,813. The sac roe harvest totaled 10,955 tons for an estimated exvessel value of \$3,197,400. The catch of 1,122 tons in the winter bait fishery was worth an estimated exvessel value of \$249,106. The Alaska Board of Fisheries created a spawn-on-kelp fishery to begin in 1992 for the Craig/Klawock area. The harvest limit was established at 15% of the total guideline harvest level for the Craig/Klawock herring stock. The harvest of 5.2 tons of spawn on kelp, representing 240 tons of herring, in conjunction with a harvest of 14.2 tons of spawn on kelp, representing 150 tons of herring in Hoonah Sound, combined for an exvessel value of \$501,307. The sac roe fishery opened in the Sitka Sound and Kah Shakes/Cat Island areas, while Seymour Canal and Lynn Canal remained below their threshold levels. The winter bait fishery was opened in the Boca de Finas/Meares Passage area, along with additional openings in Lisianski Inlet, Deer Island, Port Houghton/Hobart Bay and Necker Bay. All other areas, including Yakutat, remained below required threshold levels. One fresh bait pound operated in the Sitka Sound area.

Table 1. Number of Limited Entry and Interim Use Permits issued and fished in the Southeast Alaska and Yakutat salmon fisheries, 1977 to 1993.

Number of Permits^a

Year	Purse Seine		Drift Gillnet		Set Gillnet		Hand Troll		Power Troll	
	Issued	Fished	Issued	Fished	Issued	Fished	Issued	Fished	Issued	Fished
1977	414	325	474	438	159	144	2,953	1,836	970	750
1978	420	376	491	474	164	155	3,923	2,624	976	816
1979	418	319	491	449	167	155	3,702	2,207	979	819
1980	417	335	489	445	167	159	2,436	1,667	974	842
1981	418	364	487	447	167	158	2,048	1,153	970	793
1982	421	370	486	431	164	147	1,909	1,067	968	810
1983	421	337	480	432	165	145	2,150	946	968	810
1984	422	383	481	437	164	140	2,147	860	963	795
1985	420	368	485	446	164	148	2,028	903	963	830
1986	420	368	488	460	164	154	1,975	804	957	827
1987	420	381	486	465	165	154	1,931	763	957	828
1988	420	394	485	470	165	159	1,867	777	956	828
1989	420	365	485	466	166	160	1,820	694	955	830
1990	420	360	486	465	166	158	1,782	699	956	839
1991	420	383	485	466	168	161	1,745	700	958	847
1992	420	336	484	443	170	153	1,689	636	957	814
Average 1977-1992										
	419	360	485	452	165	153	2,257	1,146	964	817
Preliminary 1993										
	408	394 ^b	480	464 ^b	167	160 ^b	1,276	599 ^b	934	839 ^b

^a Data provided by Commercial Fisheries Entry Commission, except where noted.

^b Data from Integrated Fisheries Data Base (IFDB) 1993 fish tickets.

Table 2. Southeast Alaska region annual commercial salmon catches, in numbers, by species, 1960 to 1993.

Fishery	Chinook		Sockeye	Coho	Pink	Chum	Total
	>=28"	<=21"					
1960	301,344	N/A	533,118	681,604	2,712,146	932,430	5,160,642
1961	220,397	N/A	682,292	833,609	11,459,298	2,446,331	15,641,927
1962	196,650	N/A	727,437	1,156,277	11,255,790	1,837,010	15,173,164
1963	257,706	N/A	675,750	1,265,328	19,115,942	1,470,239	22,784,965
1964	357,139	N/A	919,124	1,586,258	18,580,259	1,927,834	23,370,614
1965	287,109	N/A	1,076,998	1,543,807	10,879,097	1,466,256	15,253,267
1966	308,042	N/A	1,046,075	1,218,827	20,350,917	3,227,402	26,151,263
1967	300,938	N/A	966,398	864,250	3,109,343	1,806,940	7,047,869
1968	331,511	N/A	826,195	1,539,686	25,077,871	2,636,207	30,411,470
1969	314,012	N/A	811,232	596,407	4,869,056	561,366	7,152,073
1970	322,315	N/A	667,909	758,900	10,657,293	2,446,110	14,852,527
1971	333,997	N/A	623,269	914,420	9,344,830	1,946,105	13,162,621
1972	286,826	N/A	916,720	1,508,654	12,399,801	2,942,712	18,054,713
1973	343,786	N/A	1,011,595	836,167	6,455,487	1,832,215	10,479,250
1974	346,570	N/A	687,422	1,276,941	4,888,711	1,684,315	8,883,959
1975	300,707	N/A	245,191	427,357	4,026,520	686,615	5,686,390
1976	241,762	N/A	595,259	821,801	5,329,598	1,030,877	8,019,297
1977	285,178	N/A	1,085,143	944,654	13,843,520	738,723	16,897,218
1978	401,411	N/A	788,319	1,714,505	21,243,378	868,963	25,016,576
1979	363,593	N/A	1,073,657	1,284,603	10,978,333	888,273	14,588,459
1980	324,610	N/A	1,108,349	1,116,237	14,500,066	1,641,514	18,690,776
1981	268,490	N/A	1,072,201	1,358,806	19,038,296	837,240	22,575,033
1982	292,220	N/A	1,490,034	2,117,303	24,211,210	1,329,501	29,440,268
1983	289,451	N/A	1,556,554	1,946,995	37,528,811	1,168,541	42,490,352
1984	270,227	N/A	1,214,687	1,909,281	24,701,608	4,083,346	32,179,149
1985	255,125	N/A	1,861,637	2,598,824	51,952,508	3,274,964	59,943,058
1986	261,892	1,162	1,442,359	3,403,917	46,156,002	3,358,937	54,624,269
1987	261,495	1,792	1,377,707	1,543,119	10,280,908	2,720,229	16,185,250
1988	263,814	1,038	1,460,358	1,046,390	11,206,533	3,533,109	17,511,242
1989	280,988	4,579	2,124,803	2,204,083	59,460,187	1,968,821	66,043,461
1990	342,333	3,776	2,155,677	2,867,200	32,385,512	2,212,913	39,967,411
1991	325,063	5,585	2,061,588	3,194,073	61,919,097	3,334,327	70,839,733
1992	233,822	2,325	2,666,693	3,694,574	35,006,168	4,947,609	46,551,191
Average 1960 to 1992 ^b							
	296,076	2,894	1,137,932	1,538,632	19,846,185	2,054,181	24,873,620
Preliminary 1993							
	278,800	3,945	3,192,510	3,568,261	57,198,804	7,612,590	71,854,910

^a Chinook troll catch is calendar year for 1960-1979 and by season (Oct 1-Sept. 30) for 1980-1993.

^b Chinook <21" average for 1986 -1993.

N/A = Not Available

Table 3. Southeast Alaska region commercial salmon catches, in numbers, by gear and fishery, 1993.

Fishery	Chinook		Sockeye	Coho	Pink	Chum	Total
	>=28"	<=21"					
Total Seine	8,629	3,939	1,692,017	471,562	53,356,449	4,556,840	60,089,436
Southern ^a	6,766	510	1,528,191	357,886	36,473,065	1,552,868	39,919,286
Northern ^b	1,863	3,429	163,826	113,676	16,883,384	3,003,972	20,170,150
Total Drift Gillnet	17,984		1,021,743	415,305	1,087,475	1,398,530	3,941,037
Tree Point	1,249		393,996	32,488	480,963	383,285	1,291,981
Prince of Wales	992		205,955	231,038	537,954	134,601	1,110,540
Stikine	1,628		76,874	14,307	39,661	22,504	154,974
Taku-Snettisham	6,721		171,453	64,138	17,103	166,388	425,803
Lynn Canal	741		172,990	59,103	11,336	306,248	550,418
Hatchery Terminal	6,653		475	14,231	458	385,504	407,321
Set Gillnet	1,311		345,897	237,390	9,903	4,065	598,566
Total Troll ^c	226,037		25,642	2,391,417	902,598	525,847	4,071,541
Hand Troll	23,805		1,668	315,420	101,907	34,594	477,394
Power Troll	202,232		23,974	2,075,997	800,691	491,253	3,594,147
Total Amette Isl. Res.	639	0	95,063	16,341	1,521,725	63,083	1,696,851
Seine	30	0	14,807	2,356	735,899	7,767	760,859
Drift Gillnet	268		76,054	13,362	456,244	54,003	599,931
Total Troll ^c	305		0	13	106	0	424
Hand Troll	172		0	0	0	0	172
Power Troll	133		0	13	106	0	252
Trap	36		4,202	610	329,476	1,313	335,637
Hatchery Controlled	22,123	0	7,545	34,140	293,600	1,054,398	1,411,806
Miscellaneous ^d	2,077	6	4,603	2,106	27,054	9,827	45,673
Southern Totals ^d	97,634	510	2,312,380	1,256,361	39,152,971	2,698,079	45,517,935
Northern Totals ^e	164,905	3,435	533,557	1,806,005	18,032,353	4,908,033	25,448,288
Yakutat Totals ^f	16,261	0	346,573	505,895	13,480	6,478	888,687
Region Totals	278,800	3,945	3,192,510	3,568,261	57,198,804	7,612,590	71,854,910

^a Districts 1-7. Includes hatchery terminal area fisheries.

^b Districts 9-14. Includes hatchery terminal area fisheries.

^c Catch accounting period for the 1993 chinook salmon season goes from 4 Oct. 1992 to 30 Sept. 1993.

^d Districts 1-8, 50, and 52.

^e Districts 9-16, 54, 56, and 57.

^f Districts 81, 82, 83, 85, 86, 89, 91, 92.

^g Includes salmon that were confiscated, caught in sportfish derbies, or commercial test fisheries, and sold.

Table 4. Southeast Alaska region annual commercial total salmon catches by gear, in numbers and percent, 1960 to 1993.

Year	Seine ^a	Drift Gillnet	Set Gillnet	Troll ^b	Annette Isl. Res. ^b	Hatchery Controlled	Miscellaneous Fishery ^c	Total
1960	3,789,373 (73%)	432,438 (8%)	177,916 (3%)	707,570 (14%)	53,345 (1%)	0 (0%)	0 (0%)	5,160,642
1961	13,778,020 (88%)	766,804 (5%)	288,253 (2%)	627,467 (4%)	181,383 (1%)	0 (0%)	0 (0%)	15,641,927
1962	12,394,256 (82%)	1,010,200 (7%)	274,139 (2%)	896,277 (6%)	598,292 (4%)	0 (0%)	0 (0%)	15,173,164
1963	20,120,230 (88%)	1,232,700 (5%)	283,814 (1%)	1,051,912 (5%)	96,309 (0%)	0 (0%)	0 (0%)	22,784,965
1964	20,060,487 (86%)	1,431,389 (6%)	302,962 (1%)	1,188,373 (5%)	387,403 (2%)	0 (0%)	0 (0%)	23,370,614
1965	12,490,889 (82%)	1,426,018 (9%)	252,443 (2%)	1,044,147 (7%)	39,770 (0%)	0 (0%)	0 (0%)	15,253,267
1966	22,697,106 (87%)	1,658,535 (6%)	257,968 (1%)	880,209 (3%)	657,445 (3%)	0 (0%)	0 (0%)	26,151,263
1967	5,151,431 (73%)	880,264 (12%)	222,423 (3%)	782,935 (11%)	10,816 (0%)	0 (0%)	0 (0%)	7,047,869
1968	27,306,485 (90%)	1,432,710 (5%)	189,474 (1%)	1,213,591 (4%)	269,210 (1%)	0 (0%)	0 (0%)	30,411,470
1969	5,099,984 (71%)	1,017,462 (14%)	239,271 (3%)	764,490 (11%)	30,866 (0%)	0 (0%)	0 (0%)	7,152,073
1970	12,173,362 (82%)	1,756,875 (12%)	166,517 (1%)	646,033 (4%)	109,740 (1%)	0 (0%)	0 (0%)	14,852,527
1971	10,495,932 (80%)	1,593,806 (12%)	257,077 (2%)	815,806 (6%)	0 (0%)	0 (0%)	0 (0%)	13,162,621
1972	14,269,165 (79%)	1,937,570 (11%)	199,266 (1%)	1,213,688 (7%)	435,024 (2%)	0 (0%)	0 (0%)	18,054,713
1973	7,316,094 (70%)	1,926,658 (18%)	198,914 (2%)	994,199 (9%)	43,385 (0%)	0 (0%)	0 (0%)	10,479,250
1974	5,583,200 (63%)	1,570,365 (18%)	170,616 (2%)	1,446,714 (16%)	113,064 (1%)	0 (0%)	0 (0%)	8,883,959
1975	3,925,990 (69%)	867,832 (15%)	196,691 (3%)	582,276 (10%)	110,901 (2%)	2,700 (0%)	0 (0%)	5,686,390
1976	5,023,411 (63%)	1,373,943 (17%)	219,987 (3%)	955,304 (12%)	446,652 (6%)	0 (0%)	0 (0%)	8,019,297
1977	12,216,997 (72%)	2,516,042 (15%)	364,295 (2%)	1,077,142 (6%)	630,283 (4%)	92,459 (1%)	0 (0%)	16,897,218
1978	19,596,101 (78%)	1,690,223 (7%)	309,944 (1%)	2,122,965 (8%)	1,293,536 (5%)	0 (0%)	3,807 (0%)	25,016,576
1979	9,955,755 (68%)	1,884,812 (13%)	424,693 (3%)	1,913,974 (13%)	362,004 (2%)	35,448 (0%)	11,773 (0%)	14,588,459
1980	13,581,616 (73%)	2,178,863 (12%)	445,334 (2%)	1,282,130 (7%)	1,191,683 (6%)	0 (0%)	11,150 (0%)	18,690,776
1981	17,472,456 (77%)	2,094,774 (9%)	428,332 (2%)	1,705,369 (8%)	729,389 (3%)	137,749 (1%)	6,964 (0%)	22,575,033
1982	23,757,840 (81%)	1,978,246 (7%)	378,093 (1%)	2,069,973 (7%)	1,227,885 (4%)	20,270 (0%)	7,961 (0%)	29,440,268
1983	35,373,471 (83%)	2,527,671 (6%)	271,517 (1%)	2,072,723 (5%)	2,091,874 (5%)	143,178 (0%)	9,918 (0%)	42,490,352
1984	24,330,951 (76%)	3,132,688 (10%)	337,983 (1%)	1,978,299 (6%)	1,736,331 (5%)	652,340 (2%)	10,557 (0%)	32,179,149
1985	50,240,276 (84%)	4,117,169 (7%)	467,790 (1%)	2,845,163 (5%)	1,603,899 (3%)	637,133 (1%)	31,628 (0%)	59,943,058
1986	46,141,141 (84%)	3,160,907 (6%)	268,165 (0%)	2,605,671 (5%)	2,155,047 (4%)	278,525 (1%)	14,813 (0%)	54,624,269
1987	8,705,028 (54%)	3,017,320 (19%)	413,922 (3%)	1,793,481 (11%)	542,799 (3%)	1,642,578 (10%)	70,122 (0%)	16,185,250
1988	11,278,824 (64%)	2,603,833 (15%)	518,378 (3%)	1,349,389 (8%)	1,057,896 (6%)	647,179 (4%)	55,743 (0%)	17,511,242
1989	54,285,491 (82%)	4,450,677 (7%)	580,470 (1%)	3,511,486 (5%)	2,691,267 (4%)	480,770 (1%)	43,300 (0%)	66,043,461
1990	30,330,840 (76%)	2,917,580 (7%)	530,740 (1%)	2,963,037 (7%)	1,727,274 (4%)	1,452,617 (4%)	45,323 (0%)	39,967,411
1991	62,198,669 (88%)	2,813,755 (4%)	403,855 (1%)	2,447,083 (3%)	1,124,897 (2%)	1,802,083 (3%)	49,391 (0%)	70,839,733
1992	34,783,681 (75%)	3,831,774 (8%)	632,646 (1%)	2,894,190 (6%)	1,190,691 (3%)	3,174,656 (7%)	43,553 (0%)	46,551,191
Average 1960 to 1992								
	19,876,502 (80%)	2,037,330 (8%)	323,451 (1%)	1,528,578 (6%)	755,768 (3%)	339,384 (1%)	12,606 (0%)	24,873,620
Preliminary 1993								
	60,089,436 (84%)	3,941,037 (5%)	598,566 (1%)	4,071,541 (6%)	1,696,851 (2%)	1,411,806 (2%)	45,673 (0%)	71,854,910

^a Includes Chinook <=21"

^b Chinook troll catch is calendar year for 1960-1979 and by season (Oct. 1-Sept. 30) for 1980-1993.

^c Includes salmon that were confiscated, caught in sportfish devices, or commercial test fisheries, and sold.

Table 5. Southeast Alaska region annual commercial chinook salmon catches by gear, in numbers and percent, 1960 to 1993.

Year	Seine ^a	Drift Gillnet	Set Gillnet	Troll ^b	Annette Isl. Res. ^b	Hatchery Controlled	Miscellaneous Fishery ^c	Total
1960	6,509 (2%)	11,523 (4%)	908 (0%)	282,404 (94%)	0 (0%)	0 (0%)	0 (0%)	301,344
1961	4,134 (2%)	9,440 (4%)	2,534 (1%)	204,289 (93%)	0 (0%)	0 (0%)	0 (0%)	220,397
1962	10,145 (5%)	10,161 (5%)	2,747 (1%)	173,597 (88%)	0 (0%)	0 (0%)	0 (0%)	196,650
1963	6,659 (3%)	6,427 (2%)	941 (0%)	243,679 (95%)	0 (0%)	0 (0%)	0 (0%)	257,706
1964	16,819 (5%)	9,371 (3%)	1,488 (0%)	329,461 (92%)	0 (0%)	0 (0%)	0 (0%)	357,139
1965	14,992 (5%)	11,892 (4%)	1,323 (0%)	258,902 (90%)	0 (0%)	0 (0%)	0 (0%)	287,109
1966	11,874 (4%)	12,527 (4%)	1,555 (1%)	282,083 (92%)	3 (0%)	0 (0%)	0 (0%)	308,042
1967	9,054 (3%)	16,464 (5%)	742 (0%)	274,678 (91%)	0 (0%)	0 (0%)	0 (0%)	300,938
1968	13,335 (4%)	12,902 (4%)	697 (0%)	304,455 (92%)	122 (0%)	0 (0%)	0 (0%)	331,511
1969	6,730 (2%)	15,178 (5%)	1,936 (1%)	290,168 (92%)	0 (0%)	0 (0%)	0 (0%)	314,012
1970	5,954 (2%)	9,460 (3%)	2,299 (1%)	304,602 (95%)	0 (0%)	0 (0%)	0 (0%)	322,315
1971	4,799 (1%)	15,718 (5%)	2,041 (1%)	311,439 (93%)	0 (0%)	0 (0%)	0 (0%)	333,997
1972	16,786 (6%)	25,142 (9%)	2,467 (1%)	242,282 (84%)	149 (0%)	0 (0%)	0 (0%)	286,826
1973	8,751 (3%)	24,471 (7%)	2,733 (1%)	307,806 (90%)	25 (0%)	0 (0%)	0 (0%)	343,786
1974	6,759 (2%)	15,481 (4%)	2,214 (1%)	322,101 (93%)	15 (0%)	0 (0%)	0 (0%)	346,570
1975	2,056 (1%)	9,082 (3%)	2,224 (1%)	287,342 (96%)	3 (0%)	0 (0%)	0 (0%)	300,707
1976	1,426 (1%)	7,222 (3%)	1,830 (1%)	231,239 (96%)	45 (0%)	0 (0%)	0 (0%)	241,762
1977	5,242 (2%)	5,578 (2%)	2,549 (1%)	271,735 (95%)	74 (0%)	0 (0%)	0 (0%)	285,178
1978	13,972 (3%)	8,266 (2%)	3,057 (1%)	375,433 (94%)	197 (0%)	0 (0%)	486 (0%)	401,411
1979	10,079 (3%)	13,738 (4%)	4,299 (1%)	334,306 (92%)	339 (0%)	0 (0%)	832 (0%)	363,593
1980	11,701 (4%)	5,433 (2%)	2,800 (1%)	303,885 (94%)	180 (0%)	0 (0%)	611 (0%)	324,610
1981	10,264 (4%)	6,317 (2%)	2,069 (1%)	248,791 (93%)	301 (0%)	0 (0%)	748 (0%)	268,490
1982	31,165 (11%)	15,238 (5%)	1,456 (0%)	242,315 (83%)	1,140 (0%)	0 (0%)	906 (0%)	292,220
1983	13,578 (5%)	4,734 (2%)	976 (0%)	269,790 (93%)	367 (0%)	0 (0%)	6 (0%)	289,451
1984	20,762 (8%)	10,338 (4%)	1,062 (0%)	235,629 (87%)	236 (0%)	937 (0%)	1,263 (0%)	270,227
1985	23,073 (9%)	10,411 (4%)	1,231 (0%)	216,086 (85%)	705 (0%)	2,658 (1%)	961 (0%)	255,125
1986	13,342 (5%)	8,437 (3%)	1,428 (1%)	237,557 (90%)	117 (0%)	1,093 (0%)	1,076 (0%)	263,050
1987	6,292 (2%)	8,430 (3%)	2,072 (1%)	242,667 (92%)	532 (0%)	2,371 (1%)	918 (0%)	263,282
1988	12,163 (5%)	9,076 (3%)	893 (0%)	231,300 (87%)	731 (0%)	9,642 (4%)	1,039 (0%)	264,844
1989	17,556 (6%)	9,613 (3%)	798 (0%)	235,609 (83%)	892 (0%)	19,602 (7%)	1,379 (0%)	285,449
1990	14,793 (4%)	14,692 (4%)	664 (0%)	287,092 (83%)	1,840 (1%)	26,340 (8%)	366 (0%)	345,787
1991	17,147 (5%)	18,593 (6%)	1,750 (1%)	263,091 (80%)	1,880 (1%)	28,136 (9%)	51 (0%)	330,648
1992	20,308 (9%)	11,256 (5%)	2,025 (1%)	183,496 (78%)	1,210 (1%)	16,945 (7%)	878 (0%)	236,118
Average 1960 to 1992								
	11,764 (4%)	11,594 (4%)	1,812 (1%)	267,555 (90%)	336 (0%)	3,264 (1%)	349 (0%)	296,676
Preliminary 1993								
	12,568 (4%)	17,984 (6%)	1,311 (0%)	226,037 (80%)	639 (0%)	22,123 (8%)	2,083 (1%)	282,745

^a Includes Chinook <=21".

^b Chinook troll catch is calendar year for 1960-1979 and by season (Oct. 1-Sept. 30) for 1980-1993.

^c Includes salmon that were confiscated, caught in sportfish derbies, or commercial test fisheries, and sold.

Table 6. Southeast Alaska region annual commercial sockeye catches by gear, in numbers and percent, 1960 to 1993.

Year	Seine	Drift Gillnet	Set Gillnet	Troll	Annette Isl. Res.	Hatchery Controlled	Miscellaneous Fishery ^a	Total
1960	358,697 (67%)	127,058 (24%)	44,671 (8%)	939 (0%)	1,753 (0%)	0 (0%)	0 (0%)	533,118
1961	418,952 (61%)	169,724 (25%)	82,403 (12%)	1,264 (0%)	9,949 (1%)	0 (0%)	0 (0%)	682,292
1962	411,748 (57%)	233,082 (32%)	73,937 (10%)	1,181 (0%)	7,489 (1%)	0 (0%)	0 (0%)	727,437
1963	422,605 (63%)	194,420 (29%)	52,517 (8%)	2,014 (0%)	4,194 (1%)	0 (0%)	0 (0%)	675,750
1964	570,250 (62%)	246,250 (27%)	90,175 (10%)	1,004 (0%)	11,445 (1%)	0 (0%)	0 (0%)	919,124
1965	672,001 (62%)	279,349 (26%)	120,417 (11%)	1,872 (0%)	3,359 (0%)	0 (0%)	0 (0%)	1,076,998
1966	480,024 (46%)	334,702 (32%)	185,360 (18%)	679 (0%)	45,310 (4%)	0 (0%)	0 (0%)	1,046,075
1967	600,602 (62%)	274,038 (28%)	88,431 (9%)	157 (0%)	3,170 (0%)	0 (0%)	0 (0%)	966,398
1968	494,851 (60%)	245,865 (30%)	80,776 (10%)	574 (0%)	4,129 (0%)	0 (0%)	0 (0%)	826,195
1969	338,217 (42%)	348,298 (43%)	123,303 (15%)	444 (0%)	970 (0%)	0 (0%)	0 (0%)	811,232
1970	307,793 (46%)	240,700 (36%)	115,992 (17%)	477 (0%)	2,947 (0%)	0 (0%)	0 (0%)	667,909
1971	162,823 (26%)	328,774 (53%)	130,743 (21%)	929 (0%)	0 (0%)	0 (0%)	0 (0%)	623,269
1972	323,927 (35%)	449,019 (49%)	134,536 (15%)	1,060 (0%)	8,178 (1%)	0 (0%)	0 (0%)	916,720
1973	348,679 (34%)	532,164 (53%)	128,412 (13%)	1,222 (0%)	1,118 (0%)	0 (0%)	0 (0%)	1,011,595
1974	235,934 (34%)	363,857 (53%)	82,413 (12%)	2,603 (0%)	2,615 (0%)	0 (0%)	0 (0%)	687,422
1975	61,877 (25%)	108,334 (44%)	73,260 (30%)	1,098 (0%)	622 (0%)	0 (0%)	0 (0%)	245,191
1976	135,811 (23%)	322,984 (54%)	130,176 (22%)	1,266 (0%)	5,022 (1%)	0 (0%)	0 (0%)	595,259
1977	327,966 (30%)	538,301 (50%)	185,377 (17%)	5,701 (1%)	27,798 (3%)	0 (0%)	0 (0%)	1,085,143
1978	272,197 (35%)	358,917 (46%)	130,681 (17%)	2,804 (0%)	23,619 (3%)	0 (0%)	101 (0%)	788,319
1979	397,137 (37%)	472,610 (44%)	165,069 (15%)	7,018 (1%)	31,345 (3%)	0 (0%)	478 (0%)	1,073,657
1980	513,266 (46%)	408,296 (37%)	159,564 (14%)	2,921 (0%)	23,734 (2%)	0 (0%)	568 (0%)	1,108,349
1981	438,921 (41%)	438,824 (41%)	149,273 (14%)	7,476 (1%)	37,528 (4%)	1 (0%)	178 (0%)	1,072,201
1982	457,198 (31%)	748,963 (50%)	211,613 (14%)	2,366 (0%)	69,689 (5%)	1 (0%)	204 (0%)	1,490,034
1983	775,780 (50%)	586,594 (38%)	152,527 (10%)	8,017 (1%)	32,478 (2%)	1 (0%)	1,157 (0%)	1,556,554
1984	457,160 (38%)	593,278 (49%)	102,565 (8%)	9,654 (1%)	49,740 (4%)	7 (0%)	2,283 (0%)	1,214,687
1985	714,714 (38%)	830,285 (45%)	234,896 (13%)	7,724 (0%)	67,885 (4%)	18 (0%)	6,115 (0%)	1,861,637
1986	587,720 (41%)	658,561 (46%)	150,776 (10%)	6,889 (0%)	36,171 (3%)	6 (0%)	2,236 (0%)	1,442,359
1987	310,622 (23%)	736,745 (53%)	259,979 (19%)	9,727 (1%)	54,292 (4%)	1,121 (0%)	5,221 (0%)	1,377,707
1988	654,731 (45%)	601,019 (41%)	162,168 (11%)	9,306 (1%)	30,979 (2%)	90 (0%)	2,065 (0%)	1,460,358
1989	822,490 (39%)	893,996 (42%)	329,461 (16%)	20,197 (1%)	50,466 (2%)	724 (0%)	7,469 (0%)	2,124,803
1990	965,902 (45%)	767,491 (36%)	344,604 (16%)	9,174 (0%)	59,625 (3%)	75 (0%)	8,806 (0%)	2,155,677
1991	1,051,167 (51%)	714,669 (35%)	229,903 (11%)	9,886 (0%)	45,153 (2%)	1,459 (0%)	9,351 (0%)	2,061,588
1992	1,337,224 (50%)	922,018 (35%)	314,187 (12%)	22,829 (1%)	61,169 (2%)	2,108 (0%)	7,158 (0%)	2,666,693
Average 1960 to 1992								
	497,848 (44%)	456,642 (40%)	152,126 (13%)	4,863 (0%)	24,665 (2%)	170 (0%)	1,618 (0%)	1,137,932
Preliminary 1993								
	1,692,017 (53%)	1,021,743 (32%)	345,897 (11%)	25,642 (1%)	95,063 (3%)	7,545 (0%)	4,603 (0%)	3,192,510

^a Includes salmon that were confiscated, caught in sportfish derbies, or commercial test fisheries, and sold.

Table 7. Southeast Alaska region annual commercial coho salmon catches by gear, in numbers and percent, 1960 to 1993.

Year	Seine	Drift Gillnet	Set Gillnet	Troll	Annette Isl. Res.	Hatchery Controlled	Miscellaneous Fishery ^a	Total
1960	125,871 (18%)	37,986 (6%)	119,149 (17%)	396,211 (58%)	2,387 (0%)	0 (0%)	0 (0%)	681,604
1961	246,524 (30%)	52,743 (6%)	128,670 (15%)	399,932 (48%)	5,740 (1%)	0 (0%)	0 (0%)	833,609
1962	239,382 (21%)	98,404 (9%)	170,776 (15%)	643,740 (56%)	3,975 (0%)	0 (0%)	0 (0%)	1,156,277
1963	316,449 (25%)	112,776 (9%)	141,365 (11%)	693,050 (55%)	1,688 (0%)	0 (0%)	0 (0%)	1,265,328
1964	506,341 (32%)	172,411 (11%)	169,780 (11%)	730,766 (46%)	6,960 (0%)	0 (0%)	0 (0%)	1,586,258
1965	556,981 (36%)	166,452 (11%)	122,207 (8%)	695,887 (45%)	2,280 (0%)	0 (0%)	0 (0%)	1,543,807
1966	451,888 (37%)	155,922 (13%)	66,252 (5%)	528,621 (43%)	16,144 (1%)	0 (0%)	0 (0%)	1,218,827
1967	188,959 (22%)	134,029 (16%)	97,211 (11%)	443,677 (51%)	374 (0%)	0 (0%)	0 (0%)	864,250
1968	463,270 (30%)	202,955 (13%)	92,005 (6%)	779,500 (51%)	1,956 (0%)	0 (0%)	0 (0%)	1,539,686
1969	109,956 (18%)	65,053 (11%)	32,555 (5%)	388,443 (65%)	400 (0%)	0 (0%)	0 (0%)	596,407
1970	294,574 (39%)	163,901 (22%)	30,279 (4%)	267,647 (35%)	2,499 (0%)	0 (0%)	0 (0%)	758,900
1971	326,264 (36%)	159,143 (17%)	37,734 (4%)	391,279 (43%)	0 (0%)	0 (0%)	0 (0%)	914,420
1972	390,325 (26%)	275,393 (18%)	46,289 (3%)	791,941 (52%)	4,706 (0%)	0 (0%)	0 (0%)	1,508,654
1973	129,593 (15%)	124,349 (15%)	41,776 (5%)	540,125 (65%)	324 (0%)	0 (0%)	0 (0%)	836,167
1974	166,687 (13%)	186,583 (15%)	77,556 (6%)	845,109 (66%)	1,006 (0%)	0 (0%)	0 (0%)	1,276,941
1975	70,193 (16%)	102,321 (24%)	37,403 (9%)	214,170 (50%)	570 (0%)	2,700 (1%)	0 (0%)	427,357
1976	87,473 (11%)	156,469 (19%)	51,743 (6%)	524,762 (64%)	1,354 (0%)	0 (0%)	0 (0%)	821,801
1977	150,535 (16%)	182,934 (19%)	92,214 (10%)	506,845 (54%)	12,126 (1%)	0 (0%)	0 (0%)	944,654
1978	242,961 (14%)	221,134 (13%)	139,500 (8%)	1,100,902 (64%)	8,671 (1%)	0 (0%)	1,337 (0%)	1,714,505
1979	176,354 (14%)	81,324 (6%)	95,873 (7%)	918,845 (72%)	5,649 (0%)	5,893 (0%)	665 (0%)	1,284,603
1980	184,570 (17%)	109,516 (10%)	119,684 (11%)	696,391 (62%)	5,263 (0%)	0 (0%)	813 (0%)	1,116,237
1981	237,402 (17%)	114,503 (8%)	132,579 (10%)	860,898 (63%)	7,839 (1%)	5,003 (0%)	582 (0%)	1,358,806
1982	428,700 (20%)	194,672 (9%)	148,854 (7%)	1,316,013 (62%)	14,345 (1%)	12,150 (1%)	2,569 (0%)	2,117,303
1983	356,946 (18%)	210,332 (11%)	81,541 (4%)	1,276,363 (66%)	17,498 (1%)	4,220 (0%)	95 (0%)	1,946,995
1984	350,037 (18%)	190,971 (10%)	182,256 (10%)	1,132,637 (59%)	25,123 (1%)	26,836 (1%)	1,421 (0%)	1,909,281
1985	418,725 (16%)	309,693 (12%)	202,835 (8%)	1,600,294 (62%)	30,679 (1%)	33,145 (1%)	3,453 (0%)	2,598,824
1986	568,333 (17%)	395,932 (12%)	92,087 (3%)	2,127,922 (63%)	145,545 (4%)	72,810 (2%)	1,288 (0%)	3,403,917
1987	122,254 (8%)	165,138 (11%)	124,406 (8%)	1,041,175 (67%)	35,794 (2%)	50,455 (3%)	3,897 (0%)	1,543,119
1988	156,997 (15%)	163,786 (16%)	205,866 (20%)	500,267 (48%)	8,671 (1%)	7,631 (1%)	3,172 (0%)	1,046,390
1989	330,761 (15%)	234,424 (11%)	176,804 (8%)	1,415,511 (64%)	23,870 (1%)	19,162 (1%)	3,551 (0%)	2,204,083
1990	372,473 (13%)	351,080 (12%)	148,820 (5%)	1,831,492 (64%)	35,104 (1%)	125,762 (4%)	2,469 (0%)	2,867,200
1991	405,727 (13%)	544,247 (17%)	166,172 (5%)	1,718,963 (54%)	62,339 (2%)	285,872 (9%)	10,753 (0%)	3,194,073
1992	488,103 (13%)	644,964 (17%)	290,288 (8%)	1,929,043 (52%)	71,282 (2%)	270,233 (7%)	661 (0%)	3,694,574
Average 1960 to 1992								
	292,776 (19%)	196,410 (13%)	117,046 (8%)	886,316 (58%)	17,035 (1%)	27,936 (2%)	1,113 (0%)	1,538,632
Preliminary 1993								
	471,562 (13%)	415,305 (12%)	237,390 (7%)	2,391,417 (67%)	16,341 (0%)	34,140 (1%)	2,106 (0%)	3,568,261

^a Includes salmon that were confiscated, caught in sportfish derbies, or commercial test fisheries, and sold.

Table 8. Southeast Alaska region annual commercial pink salmon catches by gear, in numbers and percent, 1960 to 1993.

Year	Seine	Drift Gillnet	Set Gillnet	Troll	Annette Isl. Res.	Hatchery Controlled	Miscellaneous Fishery ^a	Total
1960	2,572,279 (95%)	55,984 (2%)	12,911 (0%)	25,563 (1%)	45,409 (2%)	0 (0%)	0 (0%)	2,712,146
1961	10,936,344 (95%)	282,997 (2%)	63,608 (1%)	19,303 (0%)	157,046 (1%)	0 (0%)	0 (0%)	11,459,298
1962	10,139,595 (90%)	435,132 (4%)	26,063 (0%)	75,083 (1%)	579,917 (5%)	0 (0%)	0 (0%)	11,255,790
1963	18,188,335 (95%)	653,826 (3%)	78,697 (0%)	106,939 (1%)	88,145 (0%)	0 (0%)	0 (0%)	19,115,942
1964	17,305,646 (93%)	753,312 (4%)	40,038 (0%)	124,566 (1%)	356,697 (2%)	0 (0%)	0 (0%)	18,580,259
1965	10,061,346 (92%)	698,339 (6%)	4,402 (0%)	81,127 (1%)	33,883 (0%)	0 (0%)	0 (0%)	10,879,097
1966	18,906,895 (93%)	790,314 (4%)	1,405 (0%)	63,623 (0%)	588,680 (3%)	0 (0%)	0 (0%)	20,350,917
1967	2,807,759 (90%)	205,683 (7%)	31,580 (1%)	57,372 (2%)	6,949 (0%)	0 (0%)	0 (0%)	3,109,343
1968	24,083,473 (96%)	607,275 (2%)	2,130 (0%)	126,271 (1%)	258,722 (1%)	0 (0%)	0 (0%)	25,077,871
1969	4,312,402 (89%)	379,423 (8%)	64,266 (1%)	83,727 (2%)	29,238 (1%)	0 (0%)	0 (0%)	4,869,056
1970	9,628,138 (90%)	848,376 (8%)	7,800 (0%)	70,072 (1%)	102,907 (1%)	0 (0%)	0 (0%)	10,657,293
1971	8,505,647 (91%)	654,434 (7%)	80,192 (1%)	104,557 (1%)	0 (0%)	0 (0%)	0 (0%)	9,344,830
1972	11,369,376 (92%)	443,866 (4%)	3,087 (0%)	166,771 (1%)	416,701 (3%)	0 (0%)	0 (0%)	12,399,801
1973	5,609,519 (87%)	652,692 (10%)	16,998 (0%)	134,586 (2%)	41,692 (1%)	0 (0%)	0 (0%)	6,455,487
1974	4,174,219 (85%)	338,108 (7%)	4,248 (0%)	263,083 (5%)	109,053 (2%)	0 (0%)	0 (0%)	4,888,711
1975	3,410,755 (85%)	350,440 (9%)	80,043 (2%)	76,882 (2%)	108,400 (3%)	0 (0%)	0 (0%)	4,026,520
1976	4,286,896 (80%)	384,003 (7%)	28,492 (1%)	193,786 (4%)	436,421 (8%)	0 (0%)	0 (0%)	5,329,598
1977	11,394,597 (82%)	1,424,639 (10%)	75,504 (1%)	281,244 (2%)	575,077 (4%)	92,459 (1%)	0 (0%)	13,843,520
1978	18,545,091 (87%)	812,947 (4%)	30,525 (0%)	617,633 (3%)	1,235,444 (6%)	0 (0%)	1,738 (0%)	21,243,378
1979	8,934,010 (81%)	915,976 (8%)	152,053 (1%)	629,144 (6%)	308,234 (3%)	29,555 (0%)	9,361 (0%)	10,978,333
1980	11,869,988 (82%)	1,107,229 (8%)	143,135 (1%)	266,885 (2%)	1,105,442 (8%)	0 (0%)	7,387 (0%)	14,500,066
1981	16,268,867 (85%)	1,264,900 (7%)	133,756 (1%)	579,524 (3%)	653,409 (3%)	132,744 (1%)	5,096 (0%)	19,038,296
1982	22,014,056 (91%)	570,555 (2%)	9,850 (0%)	503,578 (2%)	1,101,882 (5%)	7,346 (0%)	3,943 (0%)	24,211,210
1983	33,649,518 (90%)	1,209,372 (3%)	25,278 (0%)	498,245 (1%)	2,017,294 (5%)	120,688 (0%)	8,416 (0%)	37,528,811
1984	21,069,273 (85%)	1,307,853 (5%)	19,870 (0%)	572,351 (2%)	1,556,283 (6%)	171,356 (1%)	4,622 (0%)	24,701,608
1985	47,231,253 (91%)	1,832,505 (4%)	16,362 (0%)	968,151 (2%)	1,418,244 (3%)	470,949 (1%)	15,044 (0%)	51,952,508
1986	42,772,257 (93%)	1,282,458 (3%)	7,254 (0%)	181,912 (0%)	1,856,013 (4%)	47,461 (0%)	8,647 (0%)	46,156,002
1987	7,031,060 (68%)	1,359,523 (13%)	12,910 (0%)	487,069 (5%)	343,013 (3%)	994,190 (10%)	53,143 (1%)	10,280,908
1988	8,830,068 (79%)	687,318 (6%)	120,204 (1%)	520,123 (5%)	890,245 (8%)	115,761 (1%)	42,814 (0%)	11,206,533
1989	52,036,028 (88%)	2,769,805 (5%)	57,174 (0%)	1,771,181 (3%)	2,550,624 (4%)	247,752 (0%)	27,623 (0%)	59,460,187
1990	27,915,150 (86%)	1,167,876 (4%)	30,839 (0%)	772,468 (2%)	1,546,186 (5%)	923,643 (3%)	29,350 (0%)	32,385,512
1991	58,597,975 (95%)	824,121 (1%)	3,051 (0%)	426,683 (1%)	933,405 (2%)	1,112,852 (2%)	21,010 (0%)	61,919,097
1992	29,733,785 (85%)	1,408,001 (4%)	18,526 (0%)	673,809 (2%)	954,756 (3%)	2,189,891 (6%)	27,400 (0%)	35,006,168
Average 1960 to 1992								
	17,702,776 (89%)	863,009 (4%)	42,492 (0%)	349,191 (2%)	678,952 (3%)	201,717 (1%)	8,048 (0%)	19,846,185
Preliminary 1993								
	53,356,449 (93%)	1,087,475 (2%)	9,903 (0%)	902,598 (2%)	1,521,725 (3%)	293,600 (1%)	27,054 (0%)	57,198,804

^a Includes salmon that were confiscated, caught in sportfish derbies, or commercial test fisheries, and sold.

Table 9. Southeast Alaska region annual commercial chum salmon catches by gear, in numbers and percent, 1960 to 1993.

Year	Seine	Drift Gillnet	Set Gillnet	Troll	Annette Isl. Res.	Hatchery Controlled	Miscellaneous Fishery ^a	Total
1960	726,017 (78%)	199,887 (21%)	277 (0%)	2,453 (0%)	3,796 (0%)	0 (0%)	0 (0%)	932,430
1961	2,172,066 (89%)	251,900 (10%)	11,038 (0%)	2,679 (0%)	8,648 (0%)	0 (0%)	0 (0%)	2,446,331
1962	1,593,386 (87%)	233,421 (13%)	616 (0%)	2,676 (0%)	6,911 (0%)	0 (0%)	0 (0%)	1,837,010
1963	1,186,182 (81%)	265,251 (18%)	10,294 (1%)	6,230 (0%)	2,282 (0%)	0 (0%)	0 (0%)	1,470,239
1964	1,661,431 (86%)	250,045 (13%)	1,481 (0%)	2,576 (0%)	12,301 (1%)	0 (0%)	0 (0%)	1,927,834
1965	1,185,569 (81%)	269,986 (18%)	4,094 (0%)	6,359 (0%)	248 (0%)	0 (0%)	0 (0%)	1,466,256
1966	2,846,425 (88%)	365,070 (11%)	3,396 (0%)	5,203 (0%)	7,308 (0%)	0 (0%)	0 (0%)	3,227,402
1967	1,545,057 (86%)	250,050 (14%)	4,459 (0%)	7,051 (0%)	323 (0%)	0 (0%)	0 (0%)	1,806,940
1968	2,251,556 (85%)	363,713 (14%)	13,866 (1%)	2,791 (0%)	4,281 (0%)	0 (0%)	0 (0%)	2,636,207
1969	332,679 (59%)	209,510 (37%)	17,211 (3%)	1,708 (0%)	258 (0%)	0 (0%)	0 (0%)	561,366
1970	1,936,903 (79%)	494,438 (20%)	10,147 (0%)	3,235 (0%)	1,387 (0%)	0 (0%)	0 (0%)	2,446,110
1971	1,496,399 (77%)	435,737 (22%)	6,367 (0%)	7,602 (0%)	0 (0%)	0 (0%)	0 (0%)	1,946,105
1972	2,168,751 (74%)	744,150 (25%)	12,887 (0%)	11,634 (0%)	5,290 (0%)	0 (0%)	0 (0%)	2,942,712
1973	1,219,552 (67%)	592,982 (32%)	8,995 (0%)	10,460 (1%)	226 (0%)	0 (0%)	0 (0%)	1,832,215
1974	999,601 (59%)	666,336 (40%)	4,185 (0%)	13,818 (1%)	375 (0%)	0 (0%)	0 (0%)	1,684,315
1975	381,109 (56%)	297,655 (43%)	3,761 (1%)	2,784 (0%)	1,306 (0%)	0 (0%)	0 (0%)	686,615
1976	511,805 (50%)	503,265 (49%)	7,746 (1%)	4,251 (0%)	3,810 (0%)	0 (0%)	0 (0%)	1,030,877
1977	338,657 (46%)	364,590 (49%)	8,651 (1%)	11,617 (2%)	15,208 (2%)	0 (0%)	0 (0%)	738,723
1978	521,880 (60%)	288,959 (33%)	6,181 (1%)	26,193 (3%)	25,605 (3%)	0 (0%)	145 (0%)	868,963
1979	438,175 (49%)	401,164 (45%)	7,399 (1%)	24,661 (3%)	16,437 (2%)	0 (0%)	437 (0%)	888,273
1980	1,002,091 (61%)	548,389 (33%)	20,151 (1%)	12,048 (1%)	57,064 (3%)	0 (0%)	1,771 (0%)	1,641,514
1981	517,002 (62%)	270,230 (32%)	10,655 (1%)	8,680 (1%)	30,312 (4%)	1 (0%)	360 (0%)	837,240
1982	826,721 (62%)	448,818 (34%)	6,320 (0%)	5,701 (0%)	40,829 (3%)	773 (0%)	339 (0%)	1,329,501
1983	577,649 (49%)	516,639 (44%)	11,195 (1%)	20,308 (2%)	24,237 (2%)	18,269 (2%)	244 (0%)	1,168,541
1984	2,433,719 (60%)	1,030,248 (25%)	32,230 (1%)	28,028 (1%)	104,949 (3%)	453,204 (11%)	968 (0%)	4,083,346
1985	1,852,511 (57%)	1,134,275 (35%)	12,466 (0%)	52,908 (2%)	86,386 (3%)	130,363 (4%)	6,055 (0%)	3,274,964
1986	2,199,489 (65%)	815,519 (24%)	16,616 (0%)	51,391 (2%)	117,201 (3%)	157,155 (5%)	1,566 (0%)	3,358,937
1987	1,234,800 (45%)	747,484 (27%)	14,555 (1%)	12,843 (0%)	109,168 (4%)	594,436 (22%)	6,943 (0%)	2,720,229
1988	1,624,865 (46%)	1,142,634 (32%)	29,247 (1%)	88,393 (3%)	127,266 (4%)	514,054 (15%)	6,650 (0%)	3,533,109
1989	1,078,656 (55%)	542,839 (28%)	16,233 (1%)	68,988 (4%)	65,415 (3%)	193,428 (10%)	3,262 (0%)	1,968,821
1990	1,062,522 (48%)	616,441 (28%)	5,813 (0%)	62,811 (3%)	84,519 (4%)	376,499 (17%)	4,308 (0%)	2,212,913
1991	2,126,653 (64%)	712,125 (21%)	2,979 (0%)	28,460 (1%)	82,120 (2%)	373,764 (11%)	8,226 (0%)	3,334,327
1992	3,204,261 (65%)	845,535 (17%)	7,620 (0%)	85,013 (2%)	102,274 (2%)	695,451 (14%)	7,455 (0%)	4,947,609
Average 1960 to 1992								
	1,371,338 (70%)	509,675 (26%)	9,974 (1%)	20,653 (1%)	34,780 (2%)	106,285 (5%)	1,477 (0%)	1,963,761
Preliminary 1993								
	4,556,840 (60%)	1,398,530 (18%)	4,065 (0%)	525,847 (7%)	63,083 (1%)	1,054,398 (14%)	9,827 (0%)	7,612,590

^a Includes salmon that were confiscated, caught in sportfish derbies, or commercial test fisheries, and sold.

Table 10. Southeast Alaska region salmon exvessel value, catch, average weight, and price paid per pound by gear and species, 1993.

Fishery	Chinook	Sockeye	Coho	Pink	Chum	Total
----- Exvessel Value in Dollars ^f -----						
Purse Seine	138,454	7,725,682	1,463,230	21,787,679	13,566,050	44,681,095
Drift Gillnet	298,996	5,620,772	2,298,650	608,393	4,529,139	13,355,951
Setnet	17,635	1,686,732	1,027,557	7,376	12,711	2,752,011
Troll ^b	6,173,762	122,762	14,291,747	569,651	1,501,462	22,659,384
Annette Isl. Res. ^c	16,076	515,573	60,923	725,224	240,774	1,558,569
Hatchery Controlled	308,308	35,140	171,327	128,968	2,502,687	3,146,429
Miscellaneous ^a	60,461	28,686	14,675	13,631	34,175	151,628
Total	7,013,692	15,735,347	19,328,107	23,840,922	22,386,999	88,305,067
----- Catch in Numbers of Salmon -----						
Purse Seine	8,629	1,692,017	471,562	53,356,449	4,556,840	60,085,497
(≥28")						
Purse Seine	3,939	N/A	N/A	N/A	N/A	3,939
(≤21")						
Drift Gillnet	17,984	1,021,743	415,305	1,087,475	1,398,530	3,941,037
Setnet	1,311	345,897	237,390	9,903	4,065	598,566
Troll ^b	226,037	25,642	2,391,417	902,598	525,847	4,071,541
Annette Isl. Res. ^c	639	95,063	16,341	1,521,725	63,083	1,696,851
Hatchery Controlled	22,123	7,545	34,140	293,600	1,054,398	1,411,806
Miscellaneous ^a	2,083	4,603	2,106	27,054	9,827	45,673
Total	282,745	3,192,510	3,568,261	57,198,804	7,612,590	71,854,910
----- Average Weight in Pounds ^e -----						
Purse Seine	16.10	5.67	6.29	2.96	7.04	N/A
(≥28")						
Purse Seine	3.73	N/A	N/A	N/A	N/A	N/A
(≤21")						
Drift Gillnet	15.13	6.20	7.86	3.71	7.62	N/A
Setnet	14.37	5.84	7.10	3.92	7.03	N/A
Troll ^b	16.01	4.76	5.60	2.98	6.17	N/A
Annette Isl. Res. ^c	17.92	5.97	7.06	3.06	9.07	N/A
Hatchery Controlled	18.53	5.66	6.84	2.97	6.71	N/A
Miscellaneous ^a	17.36	6.03	6.05	3.29	7.82	N/A
----- Average Exvessel Price Paid Per Pound ^d -----						
Purse Seine	0.98	0.81	0.49	0.14	0.42	N/A
(≥28")						
Purse Seine	0.15	N/A	N/A	N/A	N/A	N/A
(≤21")						
Drift Gillnet	1.10	0.89	0.70	0.15	0.43	N/A
Setnet	0.94	0.84	0.61	0.19	0.45	N/A
Troll ^b	1.71	1.01	1.07	0.21	0.46	N/A
Annette Isl. Res. ^c	1.40	0.91	0.53	0.16	0.42	N/A
Hatchery Controlled	0.75	0.82	0.73	0.15	0.35	N/A
Miscellaneous ^a	1.67	1.03	1.15	0.15	0.45	N/A

^a Includes salmon that were confiscated, caught in sportfish derbies, or commercial test fisheries, and sold.

^b Catch accounting period for the 1993 chinook salmon season goes from 4 Oct. 1992 to 30 Sept. 1993.

^c Annette Island Reserve includes seine, drift gillnet, hand and power troll, and trap gears.

^d (total value for all fish tickets (where value > 0)) / (total pounds for all fish tickets (where pounds > 0)).

^e (total pounds for all fish tickets (where pounds > 0)) / (total number fish for all tickets (where number > 0)).

^f (number caught) * (average weight) * (average exvessel price).

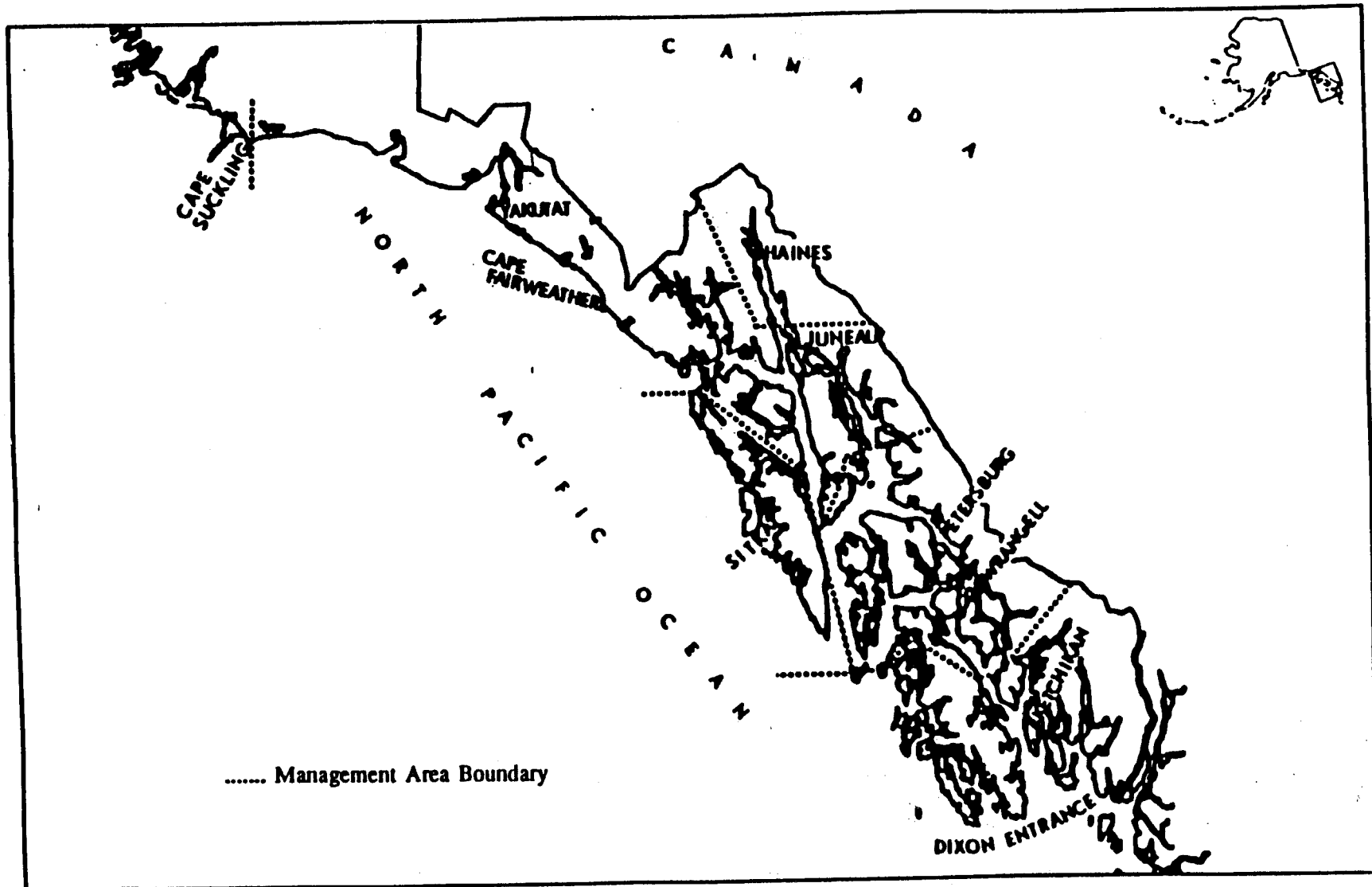


Figure 1. Region 1 (Southeast Alaska and Yakutat) management area boundaries.

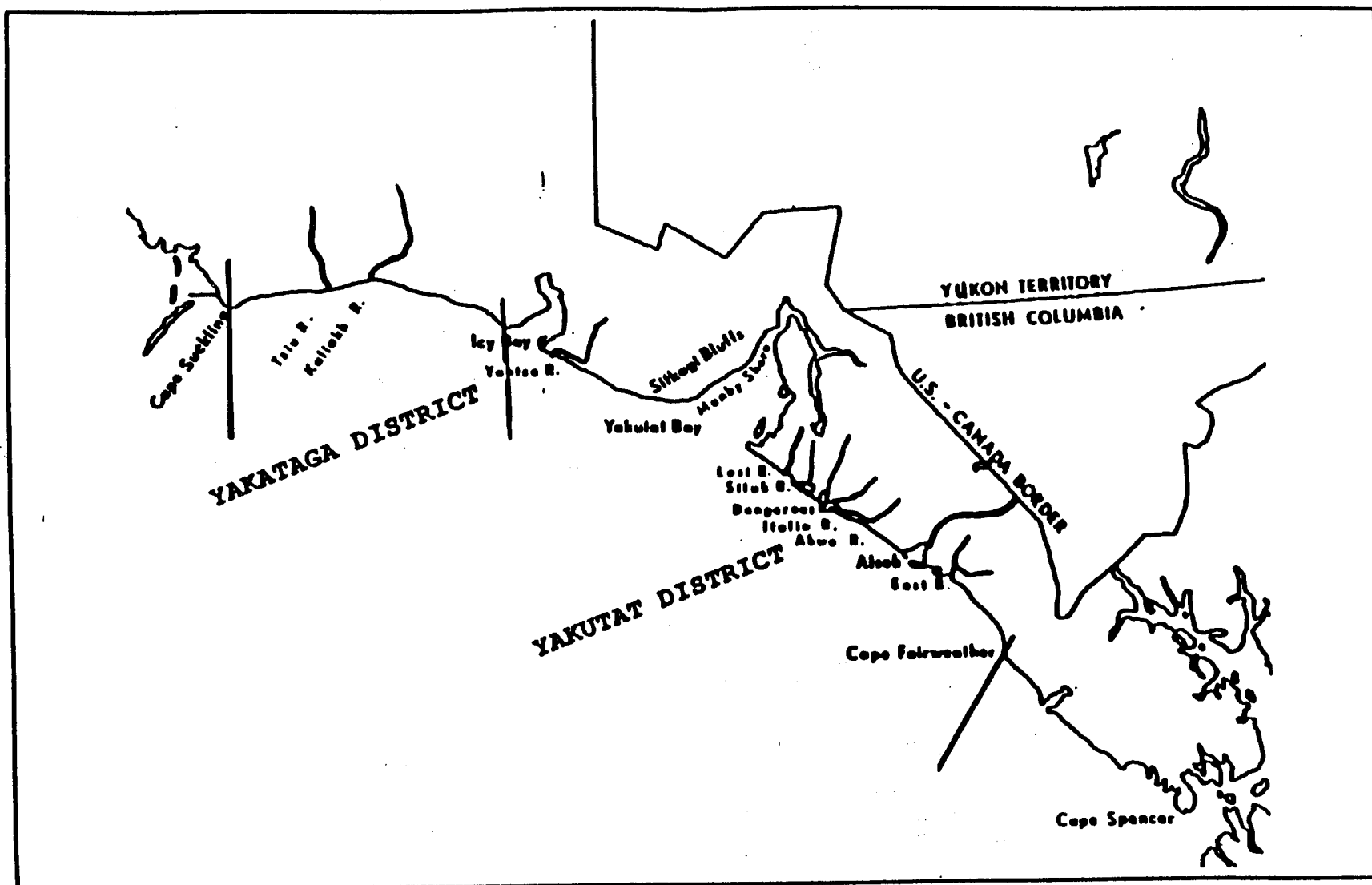


Figure 2. Yakutat's Yakataga and Yakutat Districts.

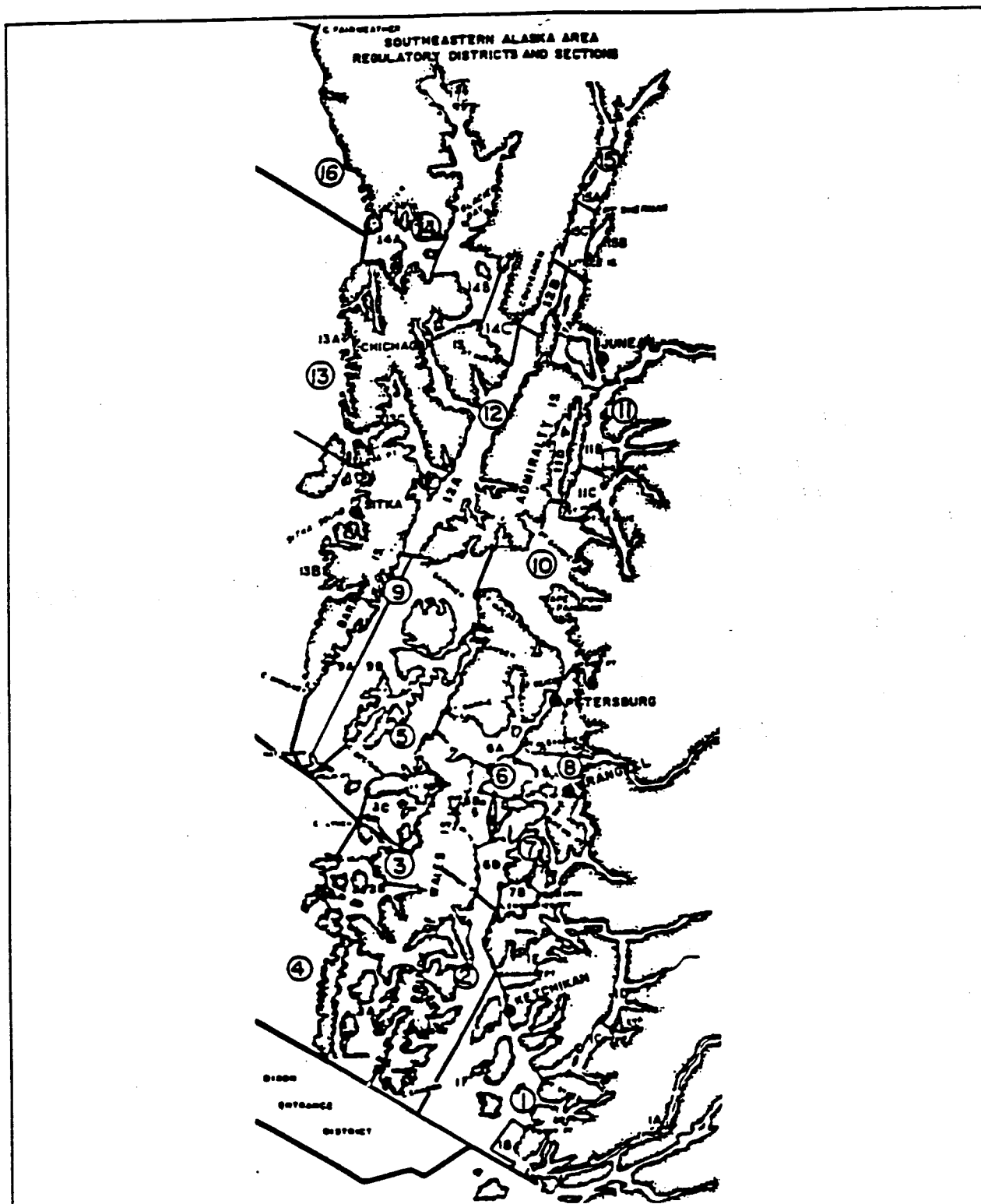


Figure 3. Southeast Alaska regulatory areas and districts.

REPORT TO THE BOARD OF FISHERIES
SOUTHEAST ALASKA-YAKUTAT SALMON NET FISHERIES, 1993



By

Marc S. Pritchett

Alaska Department of Fish and Game
Commercial Fisheries Management and Development Division
Juneau, Alaska

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ABSTRACT

This report reviews the commercial salmon purse seine, drift gillnet, hatchery cost recovery, subsistence, and personal use fisheries in Southeast Alaska during 1993 and compares harvests to historical catches. The 1993 purse seine harvest of approximately 60,800,000 was the second largest catch since statehood, and only 3% less than the 1991 record harvest. The pink salmon catch of 54,000,000 represented 89% of the total purse seine harvest. Over 4,500,000 salmon were harvested in all drift gillnet fisheries in 1993, the third highest harvest since statehood. About 34% (1,500,000) of the drift gillnet catch was comprised of pink salmon, followed by chum salmon at 32% (1,450,000), and sockeye salmon at 24% (1,100,000). Both chum and sockeye salmon driftnet catches were record harvests. Hatchery cost recovery harvests of sockeye and chum salmon were the largest on record, with chums making up 75% of the catch. The 1993 combined subsistence and personal use sockeye harvests in Southeast were above average, with sockeye making up approximately 91% of the catch, while harvests of other salmon species were reduced.

INTRODUCTION

This chapter describes the commercial salmon purse seine, drift gillnet, and salmon subsistence and personal use fisheries that occurred during 1993 in the Southeast Alaska portion of Region 1. A discussion of the fishery management actions is included, and preliminary landing estimates are presented and compared to historical production. An overview of the regional salmon fisheries and a description of the region is available in the previous chapter of this report (Introduction to the 1993 Finfish Fisheries). A review of the Region 1 troll and Yakutat set gillnet fisheries is presented in subsequent chapters.

SALMON PURSE SEINE FISHERIES

Regulations allow purse seine fishing in Districts 1 (Sections 1-C, 1-D, 1-E, and 1-F only), 2, 3, 4, 5, 6 (Sections 6-C and 6-D only), 7, 9, 10, 11 (Sections 11-A and 11-D only), 12, 13, and 14. Existing regulations also allow purse seining in terminal hatchery fishing areas at Nakat Inlet, Carroll Inlet, Neets Bay, Eastern Passage, Silver Bay, Deep Inlet and Hidden Falls. These terminal hatchery seine fisheries are discussed in a later section of this chapter; this section will discuss the general common property purse seine fishery. Although the areas specified above are generally open to seine fishing, regulations also mandate that the specific open areas and fishing periods are to be established by emergency order.

The purse seine fishery normally accounts for between 70% and 90% of the total commercial salmon harvest in the Southeast Alaska region. Pink salmon are the primary species targeted by the seine fleet, and management actions are based primarily on the abundance of pink salmon. Other species are generally harvested incidental to the pink salmon purse seine fishery. On average, sockeye and coho salmon account for approximately 2% each, chum salmon 7%, and chinook salmon less than 1%, of the total purse seine salmon harvest.

Adult tagging studies have demonstrated that pink salmon stocks in Southeast Alaska exhibit a distinct separation between the northern and southern portions of the region. For purposes of forecasting, catch tabulation, and management, Districts 1-8 are grouped as "southern Southeast" and Districts 9-16 as "northern Southeast" (see Figure 1, Chapter 1, Introduction to 1992 Finfish Fisheries). In general, management of the northern and southern purse seine fisheries is independent. However, because both the northern and southern portions are included in the same salmon registration area, purse seine fishermen are free to move between them. Inseason assessments of pink salmon run strength are determined primarily from spawning escapement information obtained from aerial surveys of sanctuary areas and streams, and from fishery performance data (i.e., catch per unit effort or CPUE). In addition, the department often charts purse seine vessels to conduct test fishing assessments of run strength in selected areas.

The 1993 general purse seine season extended from June 27 through October 24 (Table 1). The summer season ran from June 27 through August 30, and the fall seine season from August 30 until the season closure. The total 1993 purse seine harvest was approximately 60,800,000 salmon, only 3% less than the record high catch of 1991 (Tables 2 and 3). The harvest consisted of 54,100,000 pink, record high catches of 4,600,000 chum and 1,700,000 sockeye, and an above average coho harvest of 47,000,000. Pink salmon accounted for 89% of the total harvest followed by 7.5% chum, 2.8% sockeye, 0.8% coho, and chinook salmon at less than 0.1%.

Non-Retention of Chinook Salmon

Regulations specify a seasonal harvest guideline of 11,400 chinook salmon, 28 inches or larger, for the purse seine fishery. The 28-inch size limit also exists for the commercial troll and recreational fisheries. The Alaska Board of Fisheries adopted the chinook harvest guideline as part of an overall allocation scheme among commercial users resulting from implementation of the U.S./Canada Pacific Salmon Treaty (PST). Similar harvest guidelines are specified for the drift gillnet and set gillnet fisheries. Regulations further prohibit seiners from selling, but not possession of, chinook salmon between 21 and 28 inches. Chinook salmon less than 21 inches (approximately 5 lbs or less) may be sold but do not count against the seasonal harvest guideline. In addition, the PST specifies that chinook salmon produced by Alaska hatcheries, minus adjustments for "pre-Treaty" hatchery production and estimation error, do not count against the seasonal harvest guideline.

The primary management tool employed by the department to stay within the chinook harvest guideline for the purse seine fishery is to establish periods, by emergency order, when chinook salmon greater than 28 inches may not be retained. "Non-retention" is usually implemented early in the season when the total salmon catch rate is low. This allows for more efficient release of large chinook salmon and minimizes the impact of incidental mortality. Retention of larger chinook salmon is permitted as long as possible during the period when catch rates for other species is high. Once the chinook harvest guideline is obtained, non-retention is again required.

During the 1993 general summer seine season (June 27 - September 3), retention of 28-inch or larger chinook salmon was allowed during 13 of the 24 open fishing periods, or for 42 of the 57 open days.

The non-retention period included the first 13 open days of the season, through August 2. Chinook salmon retention was allowed during the August 5-6 and August 9-10 openings. Non-retention was necessary August 13-14 to assess chinook catch rates relative to the seine harvest limit of 11,400. The chinook salmon purse seine quota had not been reached during the August 13-14 opening and retention was consequently allowed during the opening beginning August 17, and continued for the remainder of the season.

The retention of large chinook salmon was also allowed during selected seine openings in the Hidden Falls terminal Hatchery fishing area. The harvest of chinook salmon in this area is comprised almost entirely of Alaskan hatchery-produced fish.

The 1993 purse seine catch of chinook salmon totaled 12,598 fish of which 8,659 were reported as 28 inches or larger and 3,939 less than 21 inches (jacks). Of the large chinook, 2,733 were Alaska hatchery-produced fish (484 common property harvest, and 2,249 hatchery terminal area fish) that did not count against the seasonal harvest guideline. When both the catch of small chinook and hatchery-produced chinook salmon are considered, the 1993 season seine harvest of chinook salmon was roughly 5,474 fish below the harvest guideline of 11,400 fish.

Northern Southeast Purse Seine Fisheries

Northern Southeast Alaska consists of regulatory Districts 9-16, although purse seine fishing is allowed only by regulation in Districts 9-14. The fishery is managed primarily for pink salmon during the summer season and chum salmon during the fall season. A minor fishery for sockeye occurs during the summer season in the vicinity of Redfish Bay and Necker Bay, on the outer coast of Baranof Island, in District 13. Additionally, the harvesting of summer-run chum salmon is a major concern during the pink salmon season; this includes distinct chum salmon seining in selected locations during the early portions of the summer season.

The summer season is separated into distinct inside and outside fisheries. The inside areas include Districts 9, 10, 11, 12, and 14 and Section 13-C. The outside area consists of the waters of Sections 13-A and 13-B, along the outer coasts of Baranof and Chichagof Islands. The inside fisheries target on two major pink salmon stock groups: 1) stocks that return through Icy Strait and disperse locally and throughout Chatham Strait, Tenakee Inlet, Peril Strait, Frederick Sound, Stephens Passage, Lynn Canal, and Seymour Canal, and 2) stocks that return through lower Chatham Strait and disperse locally and into portions of Frederick Sound. Although some intermingling of the two stock groups occurs in some seine fishing areas, distinct and independent management for each group is usually possible. The Icy Strait stock group consists of middle and late run returns, while the lower Chatham Strait stock group consists primarily of late returning pink salmon stocks. The Icy Strait group has considerable more pink salmon production potential than the lower Chatham Strait or the outside stock groups.

The 1993 Southeast Alaska Pink Salmon forecast, for the first time since the program was initiated in 1966, did not separate forecasts for Northern and Southern Southeast Alaska due to the elimination of the preemergent and early marine programs. The forecast was based on winter temperatures and parent-year escapement indexes. The total 1993 Southeast pink salmon return was projected to be 84,100,000, the largest forecast ever made. The total Southeast escapement goal of 30,900,000 pinks left a commercial Southeast harvest projection of 53,200,000 fish. Parent-year escapement levels were varied in Northern Southeast, but indicated an above average odd-year harvest for 1993. Escapements goals in District 12 were met or exceeded in the parent-year, 1991. Strong early returns were expected to Tenakee Inlet as

well as strong middle runs to streams of the district along the Admiralty and Chichagof Island shores. In District 14, parent-year escapements were generally poor with no expectations of harvest except at Homeshore Creek. Northern inside streams in Lynn Canal and Stephens Passage including Seymour Canal had poor parent-year escapements.

The 1993 season began in northern Southeast on June 27 with a 15-hour opening in Frederick Sound in District 10, Tenakee Inlet, Kelp Bay, and Hidden Falls Hatchery in District 12, and Peril Strait in Section 13-C. Pink salmon catches in District 12 were strong but poor strength was observed in the District 10, 11 and 15 fisheries. In Icy Strait the first opening was in Idaho Inlet where a small harvest of pinks occurred on July 15, and a portion of the Whitestone Shore was open on July 22 through August 5 to harvest local stocks.

Inside Fisheries

In District 9, Section 9-A was open beginning July 18 for a series of 15 to 39-hour openings. Openings were limited to the northern portion of Section 9-A near Redbluff Bay through August 6; however, beginning August 9, openings were extended to include the southern portion of Sections 9-A near Port Walter. The total pink catch in Section 9-A was 1,375,000 fish which was the largest since statehood. A return of 2,000,000 pink salmon was forecasted to return to the Port Armstrong Hatchery this year, however, the return was much lower than expected and only 246,800 fish were harvested in the Special Harvest Area (SHA) for cost recovery purposes. The total coho return to NSRAA's Mist Cove lake stocking project on lower Baranof Island was 75,000 fish. Approximately 45,000 were harvested by troll gear, 8,800 by seine gear and 15,900 for cost recovery. Pink salmon escapements were very good in all streams in Section 9-A.

Section 9-B was initially open for 39 hours beginning on August 1. The opening of the Admiralty shoreline had been delayed to try to increase escapements into District 10. Harvests along Admiralty Island during the initial opening were the highest for the season with 292,000 fish taken by 24 vessels. Effort peaked with 26 boats fishing on August 9 and 10. Peak catch per boat occurred on August 13 and 14 when four vessels harvested just over 30,000 fish per boat. The Point Gardner portion of the area was closed for the season after that opening to protect fish returning to Tyee. Effort and catches remained higher than normal with catches not dropping much below 10,000 fish per boat throughout the rest of August. The last fishery occurred here on September 3. The Admiralty Island catches were very good for the third consecutive year with a harvest of 1,400,000 fish. On August 1 and 2 the Kingsmill and Saginaw Bay shorelines were also opened, and 370,000 salmon were harvested by 34 seiners. For the next six openings catches remained between 4,000-9,000 fish per boat per day with effort peaking on August 9 and 10 with 36 boats fishing. The Kingsmill and Saginaw Bay shorelines closed on September 3. The 2,200,000 fish harvest was the highest catch since the record 1985 season. The first opening in Tebenkof Bay occurred on August 1 and 2. Effort in Tebenkof Bay remained very low throughout the season with a maximum of eight boats fishing. Only 230,000 fish were harvested this season. No extensive fisheries occurred in Port Malmesbury or the adjoining shoreline along southwest Kuiu Island. Although catches appeared good, the escapements to Port Malmesbury were weak and the area was closed after August 14

with a harvest of only 100,000 fish. Harvests totaled 3,700,000 pink salmon in Section 9-B for the season. The harvest of salmon in all of District 9 during the 1993 season was 5,500,000 fish (Table 3). This was the second highest harvest on record and the third year in a row that the harvest has exceeded 5,000,000 fish.

In District 10, pink salmon returns were expected to be very good but turned out to be poor. The first opening occurred on June 27 with the Admiralty shoreline closed to protect Seymour Canal stocks. Catch and effort remained very low for the next three openings. The Admiralty shoreline opened on July 11. On July 15, the effort in the District peaked at 75 boats due to the closure of District 4 and the partial closure of Hidden Falls. Escapements continued to be below desired levels and, after the July 18 opening the district was closed for the season with a total harvest of only 181,400 pink salmon, the lowest harvest since 1988.

In District 12, many separate fisheries occur due to its large size. In District 12, the upper Baranof Island shoreline was opened several times, beginning June 27, to harvest chum salmon returning to the Hidden Falls Hatchery. Openings were limited to the vicinity of the hatchery to minimize interception of wild chum salmon returning to Kelp Bay where returns were weak. A record chums of 1,471,500 fish was taken at the hatchery. A peak catch of 296,000 chums were taken by 149 boats during a 6-hour fishery on July 23. A record catch of 2,000,000 pink salmon was also taken along the upper Baranof Island shoreline. Most of this catch was taken incidental to directed fishing for Hidden Falls Hatchery chum salmon returns. Pink salmon escapements to Kelp Bay streams were good. Tenakee Inlet was open to Corner Bay Point from June 27-July 8, when the fishing area was increased to Seal Bay to harvest the quickly building pink salmon return. On July 11 a portion of the Basket Bay Shore was opened to increase the harvest rate of Tenakee returns. Effort dropped dramatically on July 15 when additional fishing areas were opened in District 12. Fishing success declined in mid-July and the escapement to Kadashan River, the largest single producer in Tenakee Inlet, was not building well and Tenakee Inlet was closed after the July 18th opening. Tenakee Inlet catch totaled approximately 500,000 pinks, which was about half the parent year harvest.

In an attempt to provide additional fishing pressure on Tenakee Inlet pink salmon returns, the Basket Bay shoreline of Chichagof Island in District 12 was opened for 15 hours beginning July 18. Fishing continued along this shoreline for the next four weeks (six openings), and was finally closed on August 14 when local escapements were falling behind. A total of 1,000,000 pink and 94,000 chum salmon were harvested from the area which included Peril Straits, Tenakee Inlet, Hidden Falls Hatchery, and local Basket Bay stocks.

Fishing along the Hawk Inlet Shoreline in District 12 was not expected in 1993 as a result of poor parent year escapements into the early pink salmon systems in District 11 and 15. However, good test fishing results on July 6 prompted the department to reevaluate the run returns. Gillnet harvests in Districts 11 and 15 were below average although aerial and boat surveys of the Hawk Inlet area indicated an abundance of pink salmon. In an effort to harvest an unexpected abundance of north bound pinks, the Hawk Inlet Shore was opened for a 12-hour period on July 11 north of the Latitude of Hanus Reef Light to Funter Bay. When the fishery opened the build-up of fish seen earlier was gone and only 80,000 pink

salmon were harvested. The chum salmon harvest of 30,000 fish was very high, probably a result of enhancement returns to NSRAA and DIPAC facilities. Approximately 6,000 sockeye were also harvested. No further openings were held on the Hawk Inlet shore north of Point Marsden due to the poor pink salmon returns to the northern inside area.

The Admiralty Island shoreline in the Chatham Strait portion of District 12 was open south of Point Marsden for the first time for pink salmon on July 18 for a 15-hour period, although earlier openings had occurred for chum salmon. Pink catches were very good (4,600/boat) and the open area was expanded to Fishery Point and then to Village Point during subsequent openings. Fishing continued on a 2-day-on/2-day off schedule along the Admiralty Island Shoreline July 28-August 22. Escapements in the Admiralty and Chichagof Island systems were slow to develop, even with the very large catches and indication of good run strength. Either the fish did not commit to the terminal areas as usual, or they were not local stocks. Closed areas were increased around many of the larger systems along the lower Admiralty shoreline to achieve escapement goals. The 1993 harvest of 5,000,000 pink salmon along the Admiralty shore was the largest ever recorded.

In addition, approximately one mile of shoreline was opened adjacent to Point Augusta along Chichagof Island in Northern Chatham Straits for three, 15-hour openings beginning June 27. This small area was open to access pink salmon run strength early in their migration, and sooner than they would normally be observed in the traditional terminal purse seine fisheries. Peak catches occurred on July 4 when 12,000 pinks and 5,300 chums salmon were caught by five boats. These openings were not continued when adjacent areas within Chatham Straits were opened due to the possibility of fish mixing between areas. Consequently, the sporadic openings reduced the effectiveness of the openings as a barometer of early pink salmon run strength. The department feels these openings can provide additional information which reflects both pink and chum salmon run strengths observed later in the terminal areas. This fishery is experimental and will be continued for a few years to see if it accurately determines Northern Southeast pink salmon run strength.

Numerous openings occurred in Peril Strait, Section 13-C, beginning June 27. The total pink salmon catch was 552,000, the fifth largest since statchood. Additionally, a record 74,000 chum salmon were harvested. The highest effort in Peril Strait occurred on July 15 when 54 boats fished. Pink salmon escapements were good throughout Peril Strait and Hoonah Sound.

In District 14, the Whitestone Shore of Icy Strait was open for eight days between July 22-August 6. Fishing on the Whitestone Shore allowed some additional harvest of the strong pink salmon return entering Port Frederick and Chatham Strait as well as providing a harvest of the local Whitestone Shore stocks. It was closed in early August to allow additional pink salmon escapement into Spaski Bay and Whitestone Harbor. A total of 1,200,000 pink salmon were harvested on the Whitestone Shore by approximately 25 boats fishing each week. Large pink salmon build ups were observed in Idaho Inlet in early July, resulting in a small 15-hour opening on July 15. Fourteen boats harvested 32,000 pink salmon during this opening.

Pink salmon abundance increased along the northern shore of District 14 in Icy Strait, near Homeshore Creek, beginning early August, which allowed one 6-hour opening along Homeshore on August 18. Since

this opening was held at the end of an ongoing opening, several boats from adjacent areas finished the period there. Since catches were small, their landings were credited to other areas. Pink salmon escapements into Homeshore Creek were excellent.

Outside Fisheries

Management of Sections 13-A and 13-B, along the outer coastal areas of Baranof and Chichagof Islands, is distinct from the management of the other northern Southeast districts. Salmon entering this area migrate directly from the ocean and do not pass through major migration corridors.

In 1993, pink and chum salmon returns were generally poor in the Slocum and Klag Bay area in Section 13-A. Several openings were allowed beginning July 22 to test run strength, however, catch and effort were very light and only 2,000 pink and 9,500 chum salmon were harvested. Pink and chum salmon escapements were good in most streams.

Other openings in Section 13-A included numerous openings in Salisbury Sound and lower Peril Strait July 18-September 3 to harvest strong pink salmon returns to Hoonah Sound and Deep Bay in lower Peril Strait. The total catch in Salisbury Sound/lower Peril Strait was 872,000 pink salmon, the third largest since statehood. Escapements were excellent in Deep Bay, however, escapements to Fish Bay and streams in Salisbury Sound were weak and below escapement needs.

Outside sockeye fisheries in Section 13-B were opened in Necker Bay during three 15-hour openings between July 4-July 22, and Redfish Bay during five, 15 to 39-hour openings between July 15-August 14. Effort in these areas was very light. The total sockeye catches for Necker and Redfish Bays were 17,500 and 2,800 fish, respectively.

Northern Southeast Alaska Chum Salmon Fishery

Directed purse seine fishing occurs in selected areas of northern Southeast Alaska for both summer and fall chum salmon stocks. The majority of the summer chum salmon harvest is usually taken incidental to the pink salmon fishery; however, specific summer chum salmon seining periods occur in some years, depending on local stock abundance. The primary summer chum salmon fishing areas are in Tebenkof Bay in District 9, Tenakee Inlet and Kelp Bay in District 12, Whale Bay, Slocum Arm, and Portlock Harbor along the outer coastal waters of District 13, and Frederick Sound in District 14. Additionally, a major summer chum fishery occurs at the Hidden Falls Hatchery in District 12. Fall chum salmon seining occurs in Port Camden, Security Bay, and Tebenkof Bay in District 9, Chaik Bay and Hood Bay in District 12, Nakwasina Sound in District 13, and Excursion Inlet in District 14.

Chum salmon catches in Section 9-A were excellent with a record 90,000 fish taken. Chum salmon catches throughout Section 9-B were higher than normal, especially during the first three openings of the season. A total of 185,000 chums were taken which was the fourth highest harvest since statehood. The

returns to the enhanced systems in Port Camden were much lower than anticipated, with a harvest there of only 17,000 chums.

In District 10, chum salmon catches were very good; even with the limited fishery, the catch of 73,000 fish was the third highest on record.

In District 12, a directed summer chum fishery occurred along the lower Admiralty shoreline. Three, 15-hour openings were fished June 27-July 8, with a total catch of 47,000 chums. Although chum salmon catches were excellent, the area was closed due to lagging chum escapements to local streams and not reopened. The total chum harvest along the lower Admiralty shoreline of 134,000 chum salmon was over five times the recent 10-year average, partly a result of some vessels having chum aboard from Hidden Falls.

In District 14, there was neither a directed summer chum fishery in Port Frederick or a fall chum fishery in Excursion Inlet. Chum salmon escapements into Port Frederick ended above average, but were below average in Excursion River.

Northern Southeast Alaska Pink Salmon Escapements

The large number of spawning streams in Southeast Alaska makes it impossible to obtain a count of pink salmon spawning escapements to all systems. Instead, a spawning escapement index is estimated each year, with index escapement goals established for each of the major districts. The escapement index is used primarily to compare yearly variations in pink salmon spawning escapements. The index is based on a summation of the highest (peak) pink salmon spawning counts observed in a large number of selected streams during the season.

The northern Southeast Alaska pink salmon escapement index goal is 4,800,000 fish. The 1993 escapement index totaled approximately 5,100,000 (Table 5). Escapement goals were exceeded in Districts 10, 11, and 13. Escapements were below goals in Districts 9, 12 and 14.

Southern Southeast Alaska Purse Seine Fisheries

The southern area seine fishery occurs in Districts 1-7. As in the northern area, the fishery is driven primarily by pink salmon stock abundance. However, large numbers of sockeye salmon are also harvested in District 4 during the season, a directed sockeye fishery has taken place in the Yes Bay area of District 1, and a targeted fall chum salmon fishery normally occurs in portions of District 2.

The 1993 forecast for the entire Southeast Alaska region for wild pink salmon was 83,000,000 fish, with a range of 67,000,000 to 99,500,000. This is the first year since the forecast program was initiated in 1966 that separate forecasts for southern and northern southeast were not made. The bulk of the fish (60

to 70%) were expected to be harvested in the southern districts. The majority of the run was expected to be produced from stocks returning to streams in Districts 1, 2, and 3; pink salmon returns were expected to be at or below goal levels in Districts 5-8. The escapement goal in southern Southeast Alaska has a range of 15,000,000 to 22,500,000.

District 4: Noyes Island Purse Seine Fishery

The U.S./Canada Pacific Salmon Treaty calls for limiting the sockeye harvest in the District 4 purse seine fishery during the period 1990 to 1993 to a maximum 4-year total of 480,000 fish caught prior to Statistical Week 31. Under the terms of the agreement, when the annual catch reaches 160,000 sockeye salmon, no further fishing periods will be allowed prior to Statistical Week 31. All underages not to exceed 20% of the annex ceiling will add to, and any overages will subtract from, the subsequent 4-year period.

During the first three years of the Annex, 1990, 1991, and 1992, 348,169 sockeye were harvested prior to Statistical Week 31. This left a maximum harvest of 132,000 sockeye to be harvested prior to Statistical Week 31 in 1993. There were three weeks of fishing prior to Statistical Week 31 in 1993.

The 1993 season began on July 4 (Statistical Week 28) for a 10-hour opening. This was the first time the District 4 opening had been reduced to an initial opening of 10 hours. Approximately 41,800 sockeye were harvested by 88 purse seine vessels. In order to limit the sockeye harvest in Statistical Week 29, the district was again limited to a 10-hour opening on July 11 when 89 seine boats participated in the fishery and harvested approximately 27,400 sockeye. This left approximately 69,200 sockeye to be harvested in Statistical Week 30. The district was opened on July 18 for 15 hours. A total of 21,700 sockeye were harvested by 87 seine boats. This left approximately 41,100 sockeye left to be harvested in order to attain the 4-year total of 480,000 sockeye. On July 22 the district was re-opened for 10 hours, and 106 seine boats harvested 71,900 sockeye. Therefore, the total sockeye harvest prior to Statistical Week 31 in 1993 was 162,800 fish. This put the total sockeye harvest at the end of the 4-year Annex to 511,000, or 31,000 (+6.5%) sockeye over the goal. During the first three fishing weeks over 565,000 pink salmon were caught in the District 4 purse seine fishery.

Beginning on July 25 (Statistical Week 31) and continuing through the final day of fishing on September 2, the District 4 fishery was managed according to the strength of the pink salmon return. From Wednesday, July 28 through the end of the season in early September, the southern Southeast Alaska seine fishery was managed on a 2-day-on/2-day-off fishing schedule. Good early season pink salmon escapements and catches in both northern and southern Southeast Alaska prompted this management approach. In Statistical Week 31, 800,000 pink salmon were harvested in the District 4 fishery along with 182,000 sockeye and 118,000 chum salmon. However, over the next 10 days the escapement of pink salmon into the southern portion of District 3 remained below anticipated levels. Therefore, the lower portion of the District 4 was closed for two openings (August 5 and 6, and August 9 and 10) in order to pass pink salmon into the inside waters and bolster escapements. The pink salmon run developed later

than normal in southern Southeast Alaska with peak catches occurring in Statistical Week 33. This may, in part, be due to the unusually dry weather experienced throughout the region.

For the 1993 season, the district was opened for a total of 24 days, four within the Treaty period, and 20 days after Statistical Week 30. These 24 days constituted a total of 424 hours, 45 within the Treaty period, and 379 after Statistical Week 30. Effort levels were generally lower prior to Statistical Week 31. In Statistical Weeks 31-34 the number of purse seine boats fishing in the district was again slightly below the effort levels experienced in recent years.

The pink salmon harvest of 11,600,000 fish was slightly below the average of 12,200,000 fish since 1985. The harvest of 945,300 sockeye and 581,200 chum were the second largest harvest on record. The harvest of 170,500 coho in 1993 was above the average of 160,000 coho since 1985.

Southern Southeast Alaska Inside Summer Purse Seine Fishery

The District 1 purse seine fishery opened for fifteen hours on July 4 and again on July 8 (Statistical Week 28). These early openings were in response to a strong prediction, good early pink salmon escapements in the mainland rivers of District 1, and strong early pink salmon harvest in some northern districts. However, pink salmon catches were below average in some portions of the district. Therefore, the department managed the fisheries through late July on a series of 15-hour openings on consecutive Sundays and Thursdays. As early season escapement levels were attained and catch rates improved, the purse seine fishery, starting on July 28, was managed on a 2-day-on/2-day-off fishing basis. This lasted through the final 2-day opening of the season on September 2 and 3. The final harvest of 6,660,000 pink salmon was above the average of 5,500,000 fish since 1985. Pink salmon escapement levels in the district were approximately 2,200,000 index pink salmon with an index goal of 2,000,000.

In 1993 a terminal sockeye fishery was conducted near Yes Bay in West Behm Canal to harvest sockeye salmon returning to McDonald Lake. During the 10 days this area was open to purse seining approximately 150,000 sockeye were harvested. Also, in this same fishery, approximately 140,000 chum salmon were harvested. Many of those chum salmon were destined to the Neets Bay Hatchery operated by the Southern Southeast Regional Aquaculture Association.

Districts 2 and 3 were opened on July 8 and July 25, respectively. The harvest of pink salmon in these districts were above the 1985 to 1991 averages with 6,120,000 pink salmon harvested in District 2 and 6,770,000 harvested in District 3. Escapements in these districts developed later than normal. The summer of 1993 was one of the driest on record. This drought condition may have been partly responsible for the late return of pink salmon. Pink salmon escapements were above goal with an index escapement in District 2 of 962,000 with a goal of 600,000, and in District 3 an index escapement of 2,980,000 with a goal of 1,700,000. However, due to the drought conditions many streams experienced pre-spawning mortalities brought on by low water flows, high temperatures, and low dissolved oxygen levels. The most severe of the pre-spawning mortalities occurred in Stacey Creek in District 3 where over 200,000 dead

pink salmon were recorded. The effect of the drought conditions may not be known, although it is likely that pink, chum, and coho salmon returns will be negatively effected.

Returns to northern Clarence Strait were again very poor, however, returns to Ernest Sound and Sumner Strait were much greater than expected. The Affleck Canal and Calder Bay portions of District 5 (Sumner Strait) were initially opened to purse seining on August 1. No fishing occurred in either area. All of District 5 was opened on August 5 and many of the systems in Calder Bay, El Capitan Pass, and Port Beauclerc had surprising large escapements for the beginning of the run. Effort was extensive, with 33 boats fishing in the district and the harvest exceeded 560,000 fish. Although open during a number of past years, this was the first season that such large returns to the Point Baker to Hole-in-the-Wall area have been observed. The large returns and much larger than normal seine effort in the area caused some gear conflicts with the troll fleet. Catch and effort peaked during the 39-hour opening, beginning on August 9, when 57 boats harvested slightly less than 1,000,000 fish in District 5. This was the largest single catch ever for an opening in Sumner Strait and more than in any entire year, except 1985, when the annual catch was 1,900,000 fish. Effort dropped to 10-30 boats each subsequent opening in August. Catch averages remained extremely high at 8,000-12,000 fish/boat/per day through August 26. By August 21 only one or two boats fished each day at Port Protection, thus alleviating the gear conflict with the trollers. Most of the effort had moved south of Shipley Bay. Run strength was distributed differently than in most previous years. Affleck Canal, which is normally the strongest producing area in the district, had only 280,000 fish harvested from its waters and was closed during four openings the middle and end of August. The area just south of Point Baker, which has had very little effort in the past, produced 1,300,000 fish, almost 10 times the previous high catch. Port Beauclerc and the Trout Creek area also had record harvests. The last 2-day opening in District 5 ended on September 3. Nine boats fished the district and averaged 4,000 fish/day. Record harvests of 34,000 sockeye, 19,000 coho, and 3,200,000 pinks were harvested in the district in addition to 37,000 chums. District 6 was not opened to seining.

District 7, Section 7-A (Anan), was opened on July 4 based upon good escapement in the parent year. However, because of a long-term trend of smaller than expected returns to these portions of the inside waters of southern Southeast Alaska, this section was not opened during every fishery that occurred in July. Catches were generally quite good and increased each week through July. Effort was low with 4-23 boats fishing an opening. The area was not reopened after August 2. Catch per boat per day was the highest for the last opening at 13,000 fish. Even with excellent catches, the area was closed because of lagging escapements to some of its later systems. A total of 750,000 fish were harvested in Section 7-A, the best harvest since 1979. Section 7-B was opened for 12 days August 5-August 30. Catches were very good each opening and catch per boat per day averaged 5,000-9,000 fish. Effort peaked during the August 21 fishery when 36 boats fished the district. A record harvest of 1,400,000 fish occurred in Section 7-B. The extremely good returns to District 7 can be attributed to the closure of the Ship Island shoreline and much of the Tolstoy shoreline in District 2 for the entire season. Fisheries in these areas probably intercept significant numbers of fish returning to District 7.

Southern Southeast Alaska Chum Salmon Fishery

Directed purse seine fisheries on natural fall chum salmon returns were limited to District 2 in 1993. This fishery targets on chum salmon returning to watersheds primarily in Cholmondeley Sound. The fishery started on September 9 for 12 hours. Over the next two weeks the fishery was managed on a series of 12-hour openings with the open areas encompassing more of the inside waters of Cholmondeley Sound. In late September escapement goals to Disappearance and Lagoon Creeks were close to being met. The fishery was then opened from September 28 through the closure on October 24 on a continuous basis. The total harvest of approximately 190,000 fall chum salmon was one of the largest on record for District 2. The fall season consisted of 684 hours, or 28.5 days. An average of 30 boats fished during the early portion of the fishery.

For the third year, a weir was operated on Fish Creek in Portland Canal to enumerate chum salmon. Approximately 61,000 were passed through the weir. In 1991 only 9,800 were counted, and in 1992, 46,800 were counted. In Marx Creek 35,000 chum were counted and in the main stem of the Salmon River 13,000 were counted, for a total escapement of 110,000 chum into this upper Portland Canal system. An aerial survey count of 20,000 in the Tombstone River was the best since the mid-1980's.

Southern Southeast Alaska Pink Salmon Escapements

The 1993 southern Southeast Alaska escapement index totaled approximately 7,900,000 pink salmon with an escapement index goal of 6,000,000 (Table 7). Pink salmon escapements were above goal in Districts 1, 2, 3, 5 and 6. Pink salmon escapements were below goals in District 7 (Table 7).

DRIFT GILLNET FISHERIES

Drift gillnet fishing is allowed by regulation in Districts 1 (Sections 1-A and 1-B), 6 (Sections 6-A, 6-B, 6-C, and 6-D), 8, 11 (Sections 11-B and 11-C), and 15 (Sections 15-A, 15-B, and 15-C). In addition, in 1993 drift gillnet fishing occurred in terminal hatchery areas at Wrangell Narrows, Ohmer Creek, Nakat Inlet, Deep Inlet, and Earl West Cove. Per regulations instituted in 1989, no gillnet fishing was allowed in Lower Clarence Strait. The gillnet fisheries which occurred in hatchery terminal areas are discussed in the hatchery harvest section of this report; this section will concentrate on the general drift gillnet fishing season. The salmon species, run timing, management problems and information used to manage the fisheries are quite variable among the areas, hence each area is discussed separately.

The 1993 general drift gillnet season extended for 15 weeks from June 20-September 29 (Table 8). Although the above general areas are specified for gillnetting, regulations mandate the specific open areas and fishing periods to be established by emergency order. In 1993, gillnet openings were allowed in most of the general areas.

Overall, the drift gillnet fishery (including hatchery terminal areas) harvested 4,540,968 salmon during the 1993 season, the fourth greatest recorded catch since statehood (Tables 9 and 10). The catch consisted of 1,500,000 pink (34%), 1,450,000 chum (32%), 1,100,000 sockeye (24%), 4,000,000 coho (9%), and 18,252 chinook salmon (0.4%).

Chinook Salmon Harvests

Regulations specify a seasonal harvest guideline of 7,600 chinook salmon, not including chinook produced by Alaska hatcheries. The Board of Fisheries adopted this catch limit as an allocation measure to ensure that all user groups share in the reduced chinook salmon catch limit specified by the U.S./Canada Pacific Salmon Treaty. The Board has specified that inseason management measures for maintaining the catch levels should include early season area closures for the protection of mature chinook and nighttime fishing restrictions to minimize the harvest of immature ("feeder") fish.

The 1993 drift gillnet landings of chinook totaled 18,252 fish. Of these, 11,086 were Alaska hatchery-produced fish (6,653 terminal area, and an estimated 4,433 common property harvest fish) that did not count against the seasonal harvest guideline. As a result, the total drift gillnet harvest was roughly 434 fish below the 7,600 fish harvest guideline.

Early season area closures adjacent to the Stikine, Taku, and Chilkat Rivers were maintained, as in recent years, to minimize the harvest of mature chinook salmon taken incidental to the harvest of sockeye salmon.

District 1: Tree Point/Portland Canal Drift Gillnet Fishery

The Tree Point drift gillnet fishery opened by regulation on the third Sunday of June. During the early stages of the fishery management is based on the run strength of the Alaskan wild stock chum and sockeye salmon and on the strength of the Nass River sockeye salmon. The Pacific Salmon Treaty calls for an average annual harvest of 130,000 sockeye salmon and also requires steps to be taken to minimize the interception of Portland Canal chum salmon.

In 1993 the gillnet fishery at Tree Point was initially opened for a 4-day fishing week on June 20 (Statistical Week 26). Portland Canal was closed north of Akeku Point for the entire season in order to provide protection to chum salmon destined for watersheds within the canal. Catches of sockeye salmon in Statistical Weeks 26, 27, 32 and 33 were at record levels. During those four weeks approximately 269,000 sockeye were caught. Early season chum catches were slightly above average.

Prior to the start of the District 1 Pink Salmon Management Plan in Statistical Week 30, Tree Point had four weeks of fishing which were comprised of two, 4-day fishing weeks (Statistical Weeks 26 and 27)

and two, 3-day weeks (Statistical Weeks 28 and 29). Overall, effort levels at Tree Point were close to the levels experienced since the inception of the Pacific Salmon Treaty in 1985.

On July 18 (Statistical Week 30) the District 1 Pink Salmon Management Plan was initiated and continued through Statistical Week 36. The District 1 Pink Salmon Management Plan sets gillnet fishing times at Tree Point in relation to District 1 purse seine fishing time when both fleets are concurrently harvesting the same pink salmon stocks. A 4-day week was allowed in Statistical Week 30, then for the next six weeks, 5-day fishing weeks were mandated under the Plan.

During the final three weeks of the Tree Point season fall management was initiated. During the final three weeks of fishing only 2-day fishing weeks were allowed. Although chum catches were above average, coho harvests were low through late August and into early September, so a conservative management approach was taken. The last week at Tree Point the coho catch was above the previous 8-year average, perhaps indicating an overall late return of fall coho to southern Southeast Alaska.

The total harvest of sockeye salmon at Tree Point was 394,000 fish (Table 11). This was the largest sockeye harvest of the fishery, and brought the average annual harvest since the inception of the Treaty to approximately 171,400 sockeye. The chum harvest of 383,000 is the second largest harvest on record. Contributions of enhanced salmon returning to adjacent Nakat Inlet have not been determined at this time. The harvest of 481,000 pink salmon and 33,000 coho salmon were below the last 8-year average. Tree Point was opened for 1,296 hours in 1993. This was above the last 8-year average of 1,096 hours.

Programs to estimate sockeye salmon escapements are in place for only two systems in southern Southeast Alaska, Hugh Smith and McDonald Lakes. The Hugh Smith sockeye escapement was approximately 13,500, based on weir counts and the results of a secondary marking study. This escapement was about half of the informal escapement goal of 27,000. McDonald Lake's escapement was estimated to be over 80,000. This escapement falls within the informal goal range of 70,000 to 85,000 for the fourth consecutive year.

District 6 and 8: Prince of Wales and Stikine Drift Gillnet Fishery

The Prince of Wales and Stikine River drift gillnet fisheries occur in adjoining waters of District 6 and 8 (Figure 1). The District 6 drift gillnet area includes Section 6-A in Sumner Strait, and 6-B, 6-C, and a portion of 6-D in Clarence Strait. The District 8 fishery consists of Section 8-A, waters north of the Stikine flats, and 8-B, waters south of the Stikine flats. The management of these fisheries is interrelated due to their close proximity and to the salmon migration patterns which expose some major stocks to harvest in both fisheries. Management is based on sockeye salmon in the early part of the season, pink salmon in the middle, and coho salmon at the end of the season. Both fisheries are affected by terms of the U.S./Canada Pacific Salmon Treaty (PST). Salmon stocks of Stikine River origin, a major transboundary river extending into Canada, are available for harvest in both districts. The PST specifies a sharing arrangement for Stikine River sockeye and coho salmon stocks.

The District 6 drift gillnet fishery was open for 38 days from June 20 to October 4 (Table 8). This was above the average fishing time allowed during the past 10 years of 31.5 days. Sections 6-A, 6-B and 6-C were open simultaneously each week throughout the season with an area restriction for Salmon Bay during the sockeye season. The District 8 openings were very extensive during the sockeye season, especially during the latter part of July. The 47 days open was about twice the 10-year average of 23.9 days. Area restrictions were used for the first two weeks of the season near the mouth of the Stikine River to protect adult chinook returning to the Stikine River. This season, closures were implemented along shorelines where extensive milling of chinook salmon is known to occur rather than closing large general areas that would have also severely restricted the sockeye fishery. This type of a closure worked well and will be used again in the future. Area restrictions were also used each week during the sockeye and pink fisheries in portions of Frederick Sound this season.

Fishing effort in District 6 was slightly below average the first three weeks of the sockeye season. During the remainder of the season, the effort was above the previous 10-year average, especially during the peak of the sockeye and coho seasons. District 8 weekly fishing pressure started at about twice the average but jumped to five times the average during the midweek extensions. Effort remained high in the district during the extended fishing periods and was near average during the rest of the season.

From June 20 through August 11, the management of both Districts 6 and 8 was based primarily on the harvest of sockeye salmon. The sockeye fisheries were managed in accordance with an inseason model developed by the Transboundary River Technical Committee to meet the mandated Stikine sharing agreement of the PST. Preseason expectations were for a slightly above average return to the Stikine River, with a U.S. Total Allowable Catch (TAC) of 40,500 and an average return to local Alaskan sockeye salmon systems. The District 6 harvest of approximately 206,000 sockeye was the second highest on record and 30% above the recent 10-year average of 156,800 (Table 12). The District 8 sockeye harvest of approximately 76,900 was the highest on record and considerably above the 10-year average of 10,200 (Table 13). The combined 1993 Districts 6 and 8 sockeye catches were also the highest on record.

During the first five weeks of the fishery, both Districts 6 and 8 were initially restricted to a 2-day per week fishing period to avoid over harvesting local island sockeye stocks. District 8 was given a 2-day mid-week extension on both the second and third week of the fishery. During the following two weeks the inseason Stikine Model indicated a strong return to the Stikine River and 3-day mid-week extensions were given.

During the next two weeks the Stikine Model continued to indicate a very strong return to the Stikine River while the inseason catch information indicated that the returns to the local sockeye stocks were improving. The fishing period for the next two weeks in both Districts 6 and 8 were increased to three days followed by a two-day mid-week extension in District 8 only. This management approach was used to provide sufficient fishing time to optimize the harvest of the large return of Stikine River sockeye and limit the harvest of local smaller island sockeye stocks in District 6 while maximizing the harvest of Stikine River sockeye later in the week in District 8. Area closure around Salmon Bay, Kah Sheets Bay, Petersburg Creek and Muddy River were used to protect fish backing out of these systems due to the low water. The sockeye escapement to Tahltan Lake was very high at 53,400 fish. Index escapement counts

to the local sockeye systems were average to above average. The Stikine TAC for the U.S. fishing fleet began at 40,500 from the preseason projection, climbed to 104,000 sockeye the second week in July, and ended up at 91,000. The inseason estimate of U.S. harvest of Stikine sockeye was 72,000 and is expected to increase once the postseason scale analysis is completed.

The management emphasis changed from sockeye to pink salmon during the ninth week (August 15) of the fishery. There were approximately 538,000 and 39,700 pink salmon harvested in Districts 6 and 8, respectively (Tables 12 and 13). Both of these catches were above the recent five-odd-year average for Districts 6 and 8 of 454,300 and 10,300, respectively. Pink catches in both districts were not a true reflection of the number of pinks in the area due to the low price that fishermen were receiving. During the two weeks the fishery was managed for pink salmon, only a small number of pink salmon nets were used. During this time most of the fleet used their sockeye nets to target late sockeye and small cohos. Three-day fishing periods were allowed during the two weeks of pink salmon management in both districts. The pink salmon escapement into District 6 was above average and in District 8 it was about average. Due to the low, warm water in the creeks in 1993, some pink salmon died before spawning.

During the eleventh week (August 29) the management emphasis changed from pink to coho salmon. Early season coho indicators were mixed, with the inside fisheries showing an average return, while the outside troll fishery indicated an above average to excellent return. Prior to the change to coho management, the sockeye and pink fisheries usually harvest approximately 40% of the total District 6 coho catch and about 48% of the total District 8 catch. Coho catches during the first week of the coho fishery dropped below the previous 10-year average. During the next two weeks District 6 was restricted to 2-day fishing periods and District 8 was closed. During the thirteenth week both the total coho catch and the CPUE improved in the gillnet fishery, the outside troll fishery was still indicating a strong coho return and both District 6 and 8 were open for three days during the fourteenth week. Coho catches remained good but the fishery in both districts was restricted to two days the fifteenth week, and only one day the last week (Week 16) due to the high percentage of hatchery stocks in the catch. The District 6 coho catch of 231,000 (Table 6) was the second highest catch on record and twice the recent 10-year average of 107,200 coho. The District 8 catch of 14,300 coho (Table 13) was 34% above the recent 10-year average of 9,400. Fishing effort in District 6 during the last five weeks of the coho season was two to four times higher than normal. Alaska hatchery coho contributed approximately 7,000 (30%) fish to the District 6 harvest and 630 (4%) fish to the District 8 harvest. The run lasted much later than normal with both districts closing on October 4.

The District 6 chum catch of 134,600 was the second highest on record and almost twice the previous 10-year average of 67,900. The District 8 chum of 22,500 was a new record harvest and 4.5 times above the recent 10-year average of 4,880. All of the chums harvested in both districts are caught incidentally while targeting on sockeye, pink and coho salmon. The harvest is not always a true reflection of the strength of the chum return, but rather may be a reflection of the fishing effort through the season. Chum salmon escapements into both districts appear to be near average. Hatchery chums accounted for 41,000 fish or 30% of the District 6 harvest, and 280 fish or 1.3% of the District 8 harvest.

District 11: Taku/Snettisham Drift Gillnet Fishery

The Taku/Snettisham drift gillnet fishery (District 11) occurs in the waters of Section 11-B, including Taku Inlet, Port Snettisham, and Stephens Passage south to the latitude of Midway Island, and Section 11-C including the waters of Stephens Passage south of the latitude of Midway Island and north of a line from Point League to Point Hugh (Figure 1). The fishery targets on sockeye and pink salmon early in the season and fall chum and coho salmon late in the season.

Management of the District 11 drift gillnet fishery is also affected by the PST because salmon of Taku River origin, a major transboundary river extending into Canada, contribute most of the salmon harvested in the district. The PST mandates that the fishery be managed for Taku River spawning escapement needs plus an annual Canadian harvest of 18% of the total allowable harvest of sockeye salmon originating in the Canadian portion of the Taku River. The PST also provides for a Canadian harvest of 3,000 coho salmon.

The District 11 drift gillnet fishery was opened June 20 and closed on September 29, for a total of 48 fishing days. Forty-three days were allowed in the traditional fishing areas of Taku Inlet and Stephens Passage, with an additional five days open exclusively in Speel Arm in Port Snettisham to harvest Snettisham Hatchery chinook returns. Fishing time was slightly above the 1983 to 1992 average of 42.2 days. Fishing effort in Taku Inlet of 3,781 boat/days was 34% above the 1983 to 1992 average of 2,820.

The District 11 salmon harvest was very mixed in 1993. Sockeye and summer chum salmon catches were the largest in the history of the fishery, while pink and fall chum salmon catches were extremely poor. The chinook catch was the highest since 1973 when a directed chinook fishery occurred. Coho catches were average, but below those of recent years. The 1993 harvest included 6,700 chinook, 171,500 sockeye, 64,100 coho, 17,100 pink and 166,400 chum salmon (Table 14). Catches of sockeye and fall chum salmon were comprised of wild stocks from the Taku River and Port Snettisham. Catches of chinook, pink, summer chum and coho salmon were from of both wild and hatchery stocks.

The chinook salmon harvest of 6,700 fish was three times the 1983 to 1992 average and the largest catch since 1973 when District 11 was open for a targeted chinook salmon fishery. Unlike recent years when immature feeder chinook comprised the majority of the chinook harvest, the largest component of the years catch was comprised of spawners (83%), and 56% of them were of Alaska hatchery origin. No night closures were imposed due to the small number of chinook feeders in the fishery. Management actions for chinook salmon conservation were implemented only during the first week of the season when Taku Inlet was closed north of the latitude of Jaw Point. The largest weekly catch of chinook was in the first week of the season when 1,992 chinook salmon were taken. Large numbers of spawners were caught through mid-July near Port Snettisham.

The sockeye salmon harvest of 171,500 fish was the largest on record, over twice the 1983 to 1992 average, and 26% above the previous record of 135,411 set in 1992. Sockeye salmon catches were distributed between Taku Inlet and Stephens Passage with the major portion of the harvest occurring in

Taku Inlet. Although both Taku River and Port Snettisham sockeye salmon stocks are found in the Taku Inlet and Stephens Passage, it is assumed that Stephens Passage sockeye salmon catches are comprised of a higher proportion of Port Snettisham sockeye salmon stocks. Inseason scale pattern stock composition estimates were not made in 1993. Consequently, the contribution of Taku River sockeye salmon to the commercial harvest was assumed to be equal to the 1983 to 1991 average of 80.1% of the total District 11 sockeye salmon catch, or approximately 137,000 fish. Port Snettisham is assumed to have produced the balance of the district's sockeye harvest of approximately 34,000.

The summer chum salmon run was the largest on record since hatchery returns began in 1984. The total summer chum salmon catch prior to August 15 was approximately 156,000 fish, over twice the 1983 to 1992 average, and 6% above the previous record of 147,404 set in 1991. Although hatchery returns to Douglas Island Pink and Chum, Inc. (DIPAC) hatcheries in Gastineau Channel and to the State of Alaska Snettisham Hatchery remote release site in Limestone Inlet were not marked, it is apparent that they contributed the majority of the fishery's chum harvest. No wild stock escapement strength was noted.

In contrast to the summer chum salmon return, the 1993 fall chum salmon run was extremely poor. The total fall chum salmon harvest, i.e., chum salmon caught after August 14, was 10,180 fish. This was 70% below the 1983 to 1992 average and the smallest fall chum salmon harvest since 1965.

The District 11 pink salmon harvest of 17,100 was the smallest odd year pink salmon harvest since 1967, and 91% below the 1983 to 1992 odd-year average of 199,141 fish. The catch was comprised of both DIPAC hatchery stocks and wild stocks returning to Taku River and Stephens Passage streams. The DIPAC return of approximately 27,000 pink salmon adults from a release of 47,300,000 fry represented a marine survival of only 0.06%.

The total coho salmon catch of 64,100 was the fourth largest harvest in the history of the fishery but equal to the 1983 to 1992 average as a result of the extremely large catches during the previous three years. The catch included a combination of wild Taku River coho and DIPAC hatchery fish. The preliminary estimated DIPAC contribution to the District 11 gillnet coho salmon catch was approximately 5,000, or 8% of the total catch.

Normal 3-day weekly fishing periods were allowed in Taku Inlet during most of the summer sockeye season except for three, 4-day weekly periods allowed during the peak of the run from July 4 through July 22. High fishing success in both U.S. and Canadian fisheries, along with good inseason estimates of escapement provided by the Canyon Island Fish Wheel Project, prompted the additional fishing time. No additional fishing time was necessary in Stephens Passage to harvest summer chums due to the lengthy sockeye fishing periods. Although high sockeye fishing success continued after July 22, no additional fishing time was allowed due to the expected weakness of the Tatsamenie Lake sockeye return and the need to improve the escapement to that system. An aerial survey of Crescent Lake, the primary sockeye system in Port Snettisham, also indicated strong returns.

Port Snettisham was opened only in the waters of Speel Arm for three, 2-day weekly openings from June 20 to July 8, to harvest chinook salmon returning to the Snettisham Hatchery. A total of 367 chinook

were harvested during the special fishery. None of the chinook salmon returns to the hatchery were needed for broodstock. Port Snettisham was opened again only in the waters of Gilbert Bay from July 11 to July 24 for two, 3-day openings during the regular District 11 fishing period, inside Gilbert Bay, to target enhanced sockeye returning to Sweetheart Lake which is blocked to anadromous fish. These sockeye were small 4-year-old fish, and were not effectively caught by the traditional commercial sockeye salmon gear which had mesh sizes too large to catch them. Consequently, there was no reported sockeye catch from Gilbert Bay although several vessels fished the area. An estimated 10,000 sockeye entered Sweetheart Creek unutilized. In the future, the department will encourage the use of smaller mesh nets, although larger five-year-old fish will be present in 1994 in addition to four-year-old fish.

Fall management was initiated on August 15 (Statistical Week 34), when the District 11 gillnet fishery was opened for three days. Poor chum and coho returns characterized the year's fall fishing. Beginning August 22 (Statistical Week 35) fishing time was reduced to two days as a result of poor coho and chum catches. During the following week fishing time was maintained at two days, but Taku Inlet was closed above a line from Cooper to Greeley Points to conserve escapement of chum and coho to the area during the preceding closed period. During Statistical Week 37 fishing time was reduced to only one day due to very poor catches but the fishing area was expanded to its normal closure lines. Coho catches improved slightly and reached the long term average. A 2-day fishing period during Statistical Week 38, produced a catch of approximately 15,000. Due to the extremely low numbers of chum salmon, they were not considered in the management of the fishery after mid-September. Three-day fishing periods occurred during the following two weeks to harvest coho salmon. The District 11 drift gillnet fishery was closed for the season on September 29. Aerial coho escapement counts in the U.S. portion of the Taku River appeared average.

District 15: Lynn Canal Drift Gillnet Fishery

The Lynn Canal drift gillnet fishery occurs in the waters of District 15 which consists of Section 15-A in upper Lynn Canal, 15-C in lower Lynn Canal, and 15-B in Berners Bay (Figure 1). The fishery targets sockeye during the summer season, and chum and coho salmon during the fall season.

Sockeye harvests in Lynn Canal totaled 172,990, the lowest in the past 10 years. Summer chum salmon harvests were record high with over 241,000 landed. Hatchery chum salmon, primarily returns to Boat Harbor, accounted for approximately 41% of the summer chum catch. Escapement of sockeye to Chilkoot Lake totaled 52,080, at the lower end of the annual goal range. Chilkat Lake sockeye escapement totaled 209,070, the highest recorded for this system.

Fall season chum salmon harvests, again restricted due to conservation concerns, totaled just 65,000 chums, marking the fifth consecutive year of poor chum returns. The fall coho harvest was equal to the 10-year average, with just over 60,000 landed.

The total salmon harvest for the Lynn Canal district during 1993 was 550,400 salmon, well below the recent 10-year average. Effort levels reached 120 vessels during the summer season; however, fall fishing effort was again well below normal due to weak fall chum returns.

Sockeye Season

The Lynn Canal district opened by regulation on June 20 with a 2-day fishing period in both Sections 15-A and 15-C. Waters of Section 15-A were opened south of the latitude of the northern tip of Sullivan Island as a conservation measure to protect Chilkat River mature chinook returns and early Chilkat Lake sockeye stocks. Chilkoot Inlet was opened north of the latitude of the Mud Bay line due to expected good returns of early Chilkoot sockeye. Section 15-C was opened at the start of the season, within two nautical miles of both the eastern and western shorelines, in order to access both wild summer chum and hatchery chum returning to Boat Harbor.

Chilkoot early sockeye run strength was near average and 2-day openings were held with Lutak Inlet remaining closed. Following the second period, below average run strength became apparent and conservation measures were taken to ensure weekly escapement goals. Waters of Chilkoot Inlet and upper Section 15-A, north of Talsani Island, remained closed through the third week of July to conserve early Chilkoot and Chilkat stocks. Late segment Chilkoot sockeye stocks also proved to be well below average, with the 5-year age class showing particularly weak returns. Late Chilkat stocks, however, were good, with above average escapements evident by the second week in August. In response to late Chilkat strength, 3-day openings were held during the third and fourth weeks in August. Chilkoot Inlet was opened during this period, south of the Mud Bay line, in order to better access Chilkat stocks identified during test fish catches in this area. In addition, Chilkat Inlet was opened to Letnikof Point and to Glacier Point the following week, to target late Chilkat stocks. However, beginning with the last period in August, Chilkat Inlet remained closed due to conservation concerns for the fall chum returns to Chilkat River. Chilkat lake sockeye escapement climbed sharply after mid-August; however, the abundance of the late Chilkat sockeye stock was largely undetected due to the lack of an inriver assessment program and the relatively low availability of these sockeye to the drift gillnet gear. A surplus of more than 100,000 sockeye over the upper escapement goal entered Chilkat Lake. The peak weekly catch of 26,518 Chilkat sockeye occurred during the third period in August. Chilkoot sockeye harvests, by comparison, peaked at 9,424 during the second week in June. The season's total harvest of Chilkoot sockeye was 51,425 salmon compared to 98,434 sockeye of Chilkat lake origin and 19,314 from other stocks. Effort during the summer season peaked during the second week in August with 192 vessels participating.

Summer Chum Fishery

Lower Lynn Canal, Section 15-C, was opened within two nautical miles of both the eastern and western shorelines in the lower portions of the subdistrict in order to access both wild stock summer chum salmon and hatchery chums returning to Boat Harbor. Section 15-B, Berners Bay, remained closed due to extensive fishing outside the bay. This strategy has been used in recent years to improve the quality of

the fish harvested, and to provide for adequate escapements to stream systems within the bay. Two-day periods were held beginning on the first week of the season and continuing through the last week in July. Special openings were held within one mile of the western shoreline to target hatchery chum salmon returning to Boat Harbor, and to minimize interception of sockeye stocks in the remaining waters of the section. Following the peak of wild chum stock abundance, Section 15-C was closed beginning with the first week in August, except within two nautical miles of Boat Harbor along the western shoreline. The second week of August was the final week for hatchery chum harvests, with fishing restricted to waters within Boat Harbor. Hatchery chum salmon returning to Boat Harbor contributed approximately 100,000 salmon to the total summer harvest of over 241,000 chum salmon.

Fall Chum and Coho

The fall season management strategy was initiated during the last week in August when Chilkat Inlet was closed at the latitude of Seduction Point. As in previous years, due to anticipated weak fall chum returns, increasing area closures were put into effect to conserve fall chum stocks. During the first week in September, closed waters were extended to the latitude of Talsani Island and, during the following week, were closed to the northern tip of Sullivan Island. All waters of Section 15-A remained closed after the second period in September. Section 15-C was opened in all waters during the last week of August in order to assess coho salmon stocks returning to lower Lynn Canal systems. Two-day periods were held in the section through the second week in September. Due to indications of late migratory timing and above normal coho salmon catch rates in the troll fishery, Section 15-C was opened for 3-day periods during the third and fourth weeks in September. A final 2-day opening occurred during the first week in October, resulting in sharply reduced catches, and Lynn Canal was then closed for the season. Low chum salmon abundance marked the fifth consecutive year of poor returns. Coho abundance was considerably less than the two previous record seasons; however, the late timing and harvest of over 59,000 coho salmon provided for a fall fishery. Effort was below normal with only 80 boats participating. The peak weekly harvest of 17,087 coho salmon occurred during the third period in September.

Escapement of fall chum salmon to Klchini River, particularly Herman creek, indicated adequate numbers of spawners. Overall escapement density to Chilkat River mainstem areas was below desired levels considering the extensive conservation measures in effect throughout the fall season. Coho salmon escapement was above average in most index systems, including the Tahini River, Chilkat Lake, and the Berners River. Final counts will not be available until fall surveys are completed.

HATCHERY HARVESTS

Both state and privately operated hatcheries contributed chinook, coho, pink, and chum salmon to the 1993 commercial drift gillnet and purse seine fisheries. Sockeye salmon enhancement production is presently very limited in Southeast Alaska. Hatchery-produced salmon are harvested in terminal-area common property fisheries, and in private hatchery cost-recovery fisheries.

General Common Property Harvests

With the exception of chinook and coho salmon, and in limited instances for chum salmon, reliable information is not available for the harvest of hatchery-produced salmon in the general, common property fisheries. Pink salmon production releases are seldom coded-wire-tagged, making it difficult to accurately estimate fishery contributions.

From a management standpoint, the availability of hatchery fish is of most concern in those mixed stock fisheries where fishery performance information is used for inseason management. During 1993, intensive coded-wire-tag sampling programs were conducted throughout Southeast Alaska to estimate contributions of hatchery and wild stocks to commercial fisheries. Particular emphasis was placed on sampling catches of chinook and coho salmon in the troll and net fisheries throughout the region. In addition, catches in commercial drift gillnet and purse seine fisheries were sampled to estimate coded wire tag contributions of wild and hatchery chum salmon stocks and wild sockeye salmon stocks during selected periods. A more detailed discussion of coded-wire-tagged contributions of wild and hatchery chinook and coho salmon is presented in a subsequent section of this report (Southeast and Yakutat Troll Fisheries).

Common Property Terminal Harvests

Common property fisheries were allowed for harvesting hatchery returns in terminal areas adjacent to state-operated facilities in Crystal Lake in District 6, and at privately operated enhancement facilities in Nakat Inlet (SSRAA) in District 1, Kendrick Bay (SSRAA), Earl West Cove (SSRAA) in District 7, Hidden Falls (NSRAA) in District 12, and Deep Inlet (NSRAA) in District 13. In addition, terminal troll fisheries for chinook and coho salmon were also conducted. They are discussed in detail in the troll chapter of this report.

Terminal hatchery seine and drift gillnet fisheries harvested 4,497,817 salmon in 1993, including 8,902 chinook, 1,386 chinook jacks, 17,324 sockeye, 26,734 coho, 2,098,620 pink, and 2,344,851 chum salmon (Tables 3 & 9). Terminal hatchery purse seine fisheries occurred in Nakat Inlet, Earl West Cove, Hidden Falls, and Deep Inlet. Terminal drift gillnet fisheries occurred in Nakat Inlet, Earl West Cove, Deep Inlet, and for the Crystal Lake Hatchery (Wrangell Narrows and Ohmer Creek).

Common property fisheries with drift gillnet gear were authorized in both Crystal Lake terminal fishing areas. In Wrangell Narrows, District 6, the area was open to the harvest of coho salmon only, while Ohmer Creek, District 8, was opened for the harvest of chinook salmon. Due to the expected low chinook returns to the Crystal Lake Hatchery, no terminal gillnet fishery was allowed at Blind Slough. The Blind Slough terminal area was open for six days in the fall for the harvest of coho. All fishing in Blind Slough was limited to the hours of daylight to minimize conflicts between fishing vessels and other vessels traveling the Narrows. Ohmer Creek was open for 11 days and had no night restrictions. Both areas also

opened on Mondays to avoid conflicts with sport fishermen. The harvest of salmon in both areas is summarized in Table 9.

In District 12, an early opening occurred at Hidden Falls Hatchery beginning June 27 and continuing into early August. The total catch from Hidden Falls was 1,471,000 chum salmon, a new record catch. Total run size at Hidden Falls was approximately 1,800,000 chum salmon.

In Section 13-B the second terminal fishery for chum salmon returning to the NSRAA Deep Inlet Terminal Harvest Area took place. The Board of Fisheries adopted a Deep Inlet Terminal Harvest Management Plan which requires a fishing time ratio for gillnet to seine of 2:1. Troll fishermen were allowed to fish in the terminal area when it was closed to net fishing. Fishing began on July 15 with weekly openings for gillnetters of 64 hours from Thursday through Saturday, and two, 16-hour periods for seiners on Sundays and Wednesdays. Beginning in September, the fishing schedule was revised to allow additional fishing time per week to adequately harvest the return and maintain quality. The total chum return to Deep Inlet was 1,503,600, including approximately 1,250,500 commercial harvest, 236,000 cost recovery, and 17,000 broodstock. The commercial catch breakdown by gear included 371,100 taken by gillnet gear, 450,500 by seine gear, and 429,000 by troll gear. The troll catch occurred primarily in Eastern Channel, with only 20,000 reported from the terminal area.

The Southern Southeast Regional Aquaculture Association (SSRAA) operates hatcheries and remote release sites within the southern Southeast management districts. Hatcheries are located in Neets Bay, Herring Cove, and at Beaver Falls. Remote release sites include Nakat Inlet, Earl West Cove, Carroll Inlet, Shrimp Bay, and Kendrick Bay. Chinook, summer chum, coho, and fall chum are released in Neets Bay. Chinook and coho are released in Herring Cove. Sockeye are released at Beaver Falls and in Shrimp Bay. Summer and fall chum and coho are released in Nakat Inlet. Chinook, summer and fall chum, and coho are released in Earl West Cove. Chinook salmon are released in Carroll Inlet, and summer chums are released in Kendrick Bay.

In 1993 Nakat Inlet and Earl West Cove were opened on a rotational basis for gillnet and purse seine gear. Both of those areas opened in mid-June and closed in mid-October. The Kendrick Bay Terminal Harvest Area was opened on a continual basis for purse seine gear from July 8-September 3. However, due to the anticipated small returns of 3-year-old chums, no recorded effort took place within Kendrick Bay. The harvest of hatchery chinook, coho, chum, and sockeye salmon from the other production area was limited to brood stock and cost recovery. The harvest of salmon in each of the SSRAA hatchery release sites is summarized in Tables 3 and 9.

Cost Recovery Harvests

Harvests of salmon for cost recovery were reported from 13 locations during 1993. Salmon landings totaled approximately 1,411,806 fish (Tables 16 and 17). The harvest consisted of 1,054,398 chum,

293,600 pink, 34,140 coho, 22,123 chinook, and 7,545 sockeye salmon. Cost recovery harvest of coho and pink salmon were only 13% of the 1993 catch.

CANADIAN TRANSBOUNDARY RIVER FISHERIES

A Canadian Indian food fishery has operated on the upper Stikine River for many years, and a small scale commercial fishery has occurred there since 1975. In 1979, Canada initiated larger scale commercial fisheries in the lower portions of both the Stikine and Taku Rivers. An Indian food fishery has also operated in recent years in the lower Taku River. Both drift and set gillnets are used in the lower river fisheries, although mostly drift gillnet gear has been used in recent years. These fisheries are conducted primarily in the mainstem portions of the rivers by fishermen using small skiffs. Both commercial and Indian food fisheries are included as part of the U.S./Canada Pacific Salmon Treaty (PST) which currently provides an international harvest sharing arrangement.

For Stikine River salmon, the PST stipulates that sockeye catches are to be dependent upon the size of the run as estimated in a manner agreed upon by the Transboundary Technical Committee (TTC). Between 1988 and 1992 the Canadian entitlement to sockeye salmon, for Indian food fisheries and commercial fisheries combined, increased in a step-wise manner from a minimum of 4,000 to a maximum of 30,000 fish, depending on the projected run size. For the period 1993 to 1995 the PST stipulates that the two nations are each entitled annually to 50% of the sockeye salmon total allowable catch (TAC). The TAC is determined each week using a model to make inseason forecasts of the total sockeye run to the Stikine River. Canada is also entitled to catch a maximum of 4,000 coho salmon annually. Chinook, chum and pink salmon may be harvested incidentally to the directed fisheries on sockeye and coho salmon. As required by the Transboundary River Annex of the PST, a preseason forecast of the Stikine River sockeye salmon return was used to guide the initial fishing patterns of U.S. and Canadian fisheries. Beginning the first week of July, inseason forecasts of total run size and TAC, based on catch per unit effort data and the Stikine management model, were used to determine the weekly fishing strategy.

Harvests in the combined 1993 Canadian Stikine River fisheries totaled 48,946 sockeye, 2,616 coho, 2,111 chinook, 29 pink, 391 chum salmon and 68 steelhead (Table 18). A portion of 1,743, of the sockeye salmon were taken at the Tahltan Lake Weir in a terminal harvest under terms specified in an "Excess Salmon to Spawning Requirements License" issued by the Canadian Department of Fisheries and Oceans. This harvest was allowed after it became apparent that a near-record escapement would be achieved at Tahltan Lake, far in excess of the escapement goal. The total Canadian sockeye harvest exceeded the 1979 to 1992 average of 18,855 fish by 160%, the highest catch on record. The lower river fishery, which occurs just above the border, accounted for the major portion of the harvest. Up to 14 fishermen participated in the lower Stikine River fishery in a given week, with an average of eight fishermen present each week. The total effort of 484 boat-days was 67% above the previous 10-year average of 289. Weekly fishing periods of three to five days were allowed beginning June 28 and ending October 1. The other two fisheries, one commercial and the other an Indian food fishery, occur upstream near Telegraph

Creek. The combined harvests in the two upper river fisheries totaled 1,117 chinook, and 8,739 sockeye salmon. Fishing effort in the upper river commercial fishery was much higher than previous years, with about the same number of people fishing (one to four per week), but the fishing time increased from the normal one day per week to two to five days per week from late June through the fourth week of August. The additional time fished in the latter half of the season was the result of the excellent return of Tahltan Lake sockeye.

The 1993 Stikine River preseason forecast was for a total return of 135,000 sockeye salmon. This provided for a TAC for each country of 40,500 sockeye. The run was much stronger than projected, however, with a final inseason forecast of 225,100 fish and a preliminary postseason estimate of 260,600. Including test fishery catches, approximately 74,100 sockeye were harvested by the U.S. fisheries and 52,700 by Canadian fisheries, while approximately 133,800 escaped to spawn. This was the second highest documented catch of Stikine sockeye by U.S. fisheries on record. The escapement goal of 54,000 was exceeded by an estimated 79,800 fish.

Scale and otolith analyses will determine if enhanced sockeye returning to Tahltan Lake as four-year-old fish made up a significant percentage of the run. The average weight of sockeye taken in the lower river commercial fishery (5.5 lbs) was much smaller than the overall average of 7.5 lbs.

The harvest sharing agreement for the Taku River establishes specific limits for sockeye and coho salmon. The harvest of other species is allowed only incidentally during the inriver fishery. Canada is allowed to harvest 18% of the TAC of Taku River sockeye of Canadian origin, and 3,000 coho salmon. The TAC is defined as the estimated total run (catch + escapement) of Canadian Taku River origin sockeye salmon minus the escapement goal range of 71,000 (U.S.) to 80,000 (Canada).

The Canadian Taku River harvest in 1993 totaled 33,247 sockeye, 3,033 coho, 1,805 chinook, 16 pink, and 15 chum salmon (Table 19). Almost all of the harvest was taken in the commercial fishery; the Indian food fishery contributed only an estimated 30 sockeye and 15 chinook salmon. The total Canadian sockeye catch was 91% above the 1979 to 1992 average of 17,433, an all-time record. The coho salmon catch was slightly over the 3,000 fish Canadian quota. The fishery was open for a total of 34 days, seven days more than the 1983-1992 average, and the seasonal fishing effort of 363 boat-days was 39% above the previous 10-year average. Based on the desired escapement goal range of 71,000 to 80,000 sockeye salmon for Canadian portions of the Taku River, and the preliminary total run size estimate of approximately 277,000, Canada harvested approximately 16-17% of the 1993 TAC of Taku River sockeye salmon, while the U.S. harvested from 68% to 71% of the TAC. The estimated escapement of approximately 103,000 sockeye salmon exceeded the 1984-1992 average of 99,200 by 4%.

ANNETTE ISLAND FISHERIES

The Annette Island Fishery Reserve was established by Presidential Proclamation in 1916. It provides for a 3,000 foot offshore zone wherein the Reserve Natives have exclusive fishing rights. Salmon are harvested by purse seine, gillnet, and troll gear. Four floating traps are also allowed to fish in specific areas on the west side of the Island. The 1993 trap catch was 335,637 salmon, the drift gillnet catch was 599,931, and the purse seine fishery harvested 760,859 salmon (Tables 20, 21, and 22).

SUBSISTENCE AND PERSONAL USE SALMON FISHERIES

A total of 3,089 salmon subsistence, personal use, and combined (subsistence and personal use) fishing permits was issued in the Southeast Alaska portion of the region in 1993. This included 695 subsistence, 611 personal use, and 1,783 combined permits (Table 23). The preliminary salmon harvest of 30,453 salmon included 13,374 in the subsistence fisheries, 3,174 in the personal use fisheries, and 13,905 in the combined fisheries. The total harvest was approximately 44% less than in 1992. The catch totals may increase as more permits are returned.

A preliminary subsistence harvest of only 700 salmon was reported from the Yakutat portion of the region (Table 24), and only 20 salmon were reported for the personal use fishery. The 1993 reported harvest was the smallest since 1975. The totals are expected to increase as permits are returned. A total of 130 subsistence permits was issued during 1993.

Table 1. Southeast Alaska commercial purse seine fishing time in hours open per day, by area, 1993^a.

Stat. Week	Day/ Date Week	District or Section																Terminal Hatchery Area										
		1-C	1-D	1-E	1-F	2	3-A	3-B	3-C	4	5	7-A	7-B	9-A	9-B	10	12-A	13-A	13-B	13-C	14-A	14-B	14-C	Earl West	Nakat Inlet	Hidden Falls	Kendrick Bay	Deep Inlet
26	20-Jun Sun	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	21-Jun Mon	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	12	-	-	-	-
	22-Jun Tue	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	23-Jun Wed	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	24-Jun Thu	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	12	-	-	-	-
	25-Jun Fri	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	26-Jun Sat	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
27	27-Jun Sun	-	-	-	-	-	-	-	-	-	-	-	-	-	-	15	15	-	-	15	-	-	-	12	-	15	-	-
	28-Jun Mon	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	29-Jun Tue	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	30-Jun Wed	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	12	-	-	-	-
	01-Jul Thu	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	02-Jul Fri	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	03-Jul Sat	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	12	-	-	-	-
28	04-Jul Sun	-	-	-	15	-	-	-	10	-	15	-	-	-	15	15	-	15	15	-	-	-	-	-	-	15	-	-
	05-Jul Mon	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	06-Jul Tue	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	12	-	-	-	-
	07-Jul Wed	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	08-Jul Thu	-	-	-	15	15	-	-	-	-	15	-	-	-	15	15	-	-	15	-	-	-	-	-	-	15	19	-
	09-Jul Fri	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	12	-	-	24	-
	10-Jul Sat	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	24	-
29	11-Jul Sun	-	-	-	15	15	-	-	10	-	15	-	-	-	15	15	-	15	15	-	-	-	-	-	-	15	24	-
	12-Jul Mon	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	12	-	-	24	-
	13-Jul Tue	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	24	-
	14-Jul Wed	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	24	-
	15-Jul Thu	-	-	-	15	15	-	-	-	-	-	-	-	-	15	15	-	15	15	15	15	-	-	12	-	15	24	-
	16-Jul Fri	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	24	-
	17-Jul Sat	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	24	-
30	18-Jul Sun	-	-	-	15	15	-	-	15	-	15	-	15	-	15	15	15	15	-	-	-	-	12	-	15	24	16	
	19-Jul Mon	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	12	-	-	24	-
	20-Jul Tue	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	24	-
	21-Jul Wed	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	12	-	-	24	16
	22-Jul Thu	-	15	15	15	15	-	-	10	-	-	-	-	-	-	-	-	15	15	15	-	15	15	-	-	-	24	-
	23-Jul Fri	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	6	-	-	-	-	-	-	-	6	24	-	-
	24-Jul Sat	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	12	12	-	24	-	-
31	25-Jul Sun	15	15	15	-	15	15	-	15	-	15	-	15	-	-	15	15	15	15	-	15	15	-	-	15	24	16	
	26-Jul Mon	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	24	-
	27-Jul Tue	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	12	-	-	24	-
	28-Jul Wed	-	19	-	19	19	19	-	19	-	19	-	-	-	-	19	19	-	19	-	19	19	-	-	15	24	16	
	29-Jul Thu	-	20	-	20	20	20	-	20	-	20	-	-	-	-	20	20	-	20	-	20	20	-	-	12	-	24	-
	30-Jul Fri	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	24	-
	31-Jul Sat	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	24	-

^a Districts or Sections not listed were not opened in 1993.

-Continued-

Table 1. (page 2 of 4).

Stat. Week	Day/ Date	Week	District or Section																	Terminal Hatchery Area									
			1-C	1-D	1-E	1-F	2	3-A	3-B	3-C	4	5	7-A	7-B	9-A	9-B	10	12-A	13-A	13-B	13-C	14-A	14-B	14-C	Earl West	Nakat Inlet	Hidden Falls	Kendrick Bay	Deep Inlet
32	01-Aug Sun		-	19	-	19	19	19	19	19	19	19	19	-	19	19	-	19	19	-	19	-	-	19	-	-	19	24	16
	02-Aug Mon		-	20	-	20	20	20	20	20	20	20	-	20	20	-	20	20	-	20	-	-	20	12	-	20	24	-	
	03-Aug Tue		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	12	-	24	-	
	04-Aug Wed		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	24	16	
	05-Aug Thu		-	19	-	19	19	-	-	19	19	19	-	19	19	19	-	19	19	19	-	-	19	12	-	19	24	-	
	06-Aug Fri		-	20	-	20	20	-	-	20	20	20	-	20	20	20	-	20	20	20	-	-	20	-	-	20	24	-	
	07-Aug Sat		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	12	-	24	-	
33	08-Aug Sun		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	12	-	-	24	16		
	09-Aug Mon		-	19	-	19	19	-	-	19	19	19	-	19	19	19	-	19	19	19	-	-	-	-	-	19	24	-	
	10-Aug Tue		-	20	-	20	20	-	-	20	20	20	-	20	20	20	-	20	20	20	-	-	-	-	-	21	24	-	
	11-Aug Wed		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	12	-	-	24	16		
	12-Aug Thu		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	24	-		
	13-Aug Fri		-	-	-	19	19	19	19	19	19	19	-	19	19	19	-	19	19	19	-	-	-	-	12	19	24	-	
	14-Aug Sat		-	-	-	20	20	20	20	20	20	20	-	20	20	20	-	20	20	20	-	-	-	12	-	20	24	-	
34	15-Aug Sun		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	24	16	
	16-Aug Mon		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	24	-	
	17-Aug Tue		-	-	-	19	19	19	19	19	19	19	-	19	19	-	19	-	-	-	-	-	-	12	-	-	24	-	
	18-Aug Wed		-	-	-	20	20	20	20	20	20	20	-	20	20	-	20	-	-	-	-	-	6	-	12	-	24	16	
	19-Aug Thu		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	24	-	
	20-Aug Fri		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	12	-	-	24	-	
	21-Aug Sat		-	-	-	19	19	19	19	19	19	19	-	19	-	19	-	19	19	-	-	-	-	-	-	-	24	-	
35	22-Aug Sun		-	-	-	20	20	20	20	20	20	20	-	20	-	20	-	20	20	-	-	-	-	-	-	-	24	15	
	23-Aug Mon		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	12	12	-	24	-	
	24-Aug Tue		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	24	-	
	25-Aug Wed		-	-	-	19	19	19	19	19	19	19	-	19	19	19	-	19	-	-	19	-	-	-	-	-	24	15	
	26-Aug Thu		-	-	-	20	20	20	20	20	20	20	-	20	20	20	-	20	-	-	20	-	-	12	-	-	24	-	
	27-Aug Fri		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	24	-	
	28-Aug Sat		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	12	-	24	-	
36	29-Aug Sun		-	-	-	18	18	18	18	18	18	18	-	18	18	18	-	18	-	-	18	-	-	12	-	-	24	-	
	30-Aug Mon		-	-	-	21	21	21	21	21	21	21	-	21	21	21	-	21	-	-	21	-	-	-	-	-	24	-	
	31-Aug Tue		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	24	-	
	01-Sep Wed		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	12	-	-	24	15		
	02-Sep Thu		-	-	-	18	18	18	18	18	15	18	-	-	18	18	-	18	18	-	18	-	-	-	12	18	24	-	
	03-Sep Fri		-	-	-	21	21	21	21	21	-	21	-	-	21	21	-	21	21	-	21	-	-	-	-	21	12	-	
	04-Sep Sat		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
37	05-Sep Sun		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
	06-Sep Mon		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	12	-	-	-	-	
	07-Sep Tue		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	12	-	-	-	
	08-Sep Wed		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	15	
	09-Sep Thu		-	-	-	-	12	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	12	-	-	-	-	-	
	10-Sep Fri		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
	11-Sep Sat		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	

-Continued-

Table 1. (page 3 of 4).

Stat. Week	Day/ Date Week	District or Section																Terminal Hatchery Area										
		1-C	1-D	1-E	1-F	2	3-A	3-B	3-C	4	5	7-A	7-B	9-A	9-B	10	12-A	13-A	13-B	13-C	14-A	14-B	14-C	Ead West	Nakat Inlet	Hidden Falls	Kendrick Bay	Deep Inlet
38	12-Sep Sun	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	12	12	-	-	15
	13-Sep Mon	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	14-Sep Tue	-	-	-	-	12	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	15-Sep Wed	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	12	-	-	-	15
	16-Sep Thu	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	17-Sep Fri	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	12	-	-	-
	18-Sep Sat	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	12	-	-	-	15
39	19-Sep Sun	-	-	-	-	12	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	20-Sep Mon	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	21-Sep Tue	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	12	-	-	-	-	-
	22-Sep Wed	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	12	-	-	-	12
	23-Sep Thu	-	-	-	-	12	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	24-Sep Fri	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	12	-	-	-	-	-
	25-Sep Sat	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	12
40	26-Sep Sun	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	27-Sep Mon	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	12	12	-	-	-
	28-Sep Tue	-	-	-	-	14	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	29-Sep Wed	-	-	-	-	24	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	30-Sep Thu	-	-	-	-	24	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	12	-	-	-	-	-
	01-Oct Fri	-	-	-	-	24	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	12	-	-	-
	02-Oct Sat	-	-	-	-	24	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
41	03-Oct Sun	-	-	-	-	24	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	12	-	-	-	-	-
	04-Oct Mon	-	-	-	-	24	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	05-Oct Tue	-	-	-	-	24	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	06-Oct Wed	-	-	-	-	24	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	12	12	-	-	-	-
	07-Oct Thu	-	-	-	-	24	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	08-Oct Fri	-	-	-	-	24	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	09-Oct Sat	-	-	-	-	24	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	12	-	-	-	-	-
42	10-Oct Sun	-	-	-	-	24	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	11-Oct Mon	-	-	-	-	24	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	12	-	-	-	-
	12-Oct Tue	-	-	-	-	24	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	13-Oct Wed	-	-	-	-	24	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	14-Oct Thu	-	-	-	-	24	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	15-Oct Fri	-	-	-	-	24	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	12	-	-	-	-	-
	16-Oct Sat	-	-	-	-	24	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	12	-	-	-
43	17-Oct Sun	-	-	-	-	24	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	18-Oct Mon	-	-	-	-	24	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	12	-	-	-	-	-
	19-Oct Tue	-	-	-	-	24	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	20-Oct Wed	-	-	-	-	24	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	21-Oct Thu	-	-	-	-	24	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	22-Oct Fri	-	-	-	-	24	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	12	12	-	-	-	-
	23-Oct Sat	-	-	-	-	24	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

-Continued-

Table 1. (page 4 of 4).

Stat. Week	Day/ Date	Week	District or Section																		Terminal Hatchery Area							
			1-C	1-D	1-E	1-F	2	3-A	3-B	3-C	4	5	7-A	7-B	9-A	9-B	10	12-A	13-A	13-B	13-C	14-A	14-B	14-C	Earl West	Nakat Inlet	Hidden Falls	Kendrick Bay
44	24-Oct	Sun	-	-	-	-	19	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	12	-	-	-	-
	25-Oct	Mon	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	26-Oct	Tue	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	27-Oct	Wed	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	12	-	-	-	-
	28-Oct	Thu	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	29-Oct	Fri	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	30-Oct	Sat	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	12	-	-	-	-

Table 2. Southeast Alaska annual commercial purse seine salmon catches, in numbers, by species, 1960 to 1993.

Year	Chinook ≥ 28"	≤ 21"	Sockeye	Coho	Pink	Chum	Total
1960	6,509	N/A	358,697	125,871	2,572,279	726,017	3,789,373
1961	4,134	N/A	418,952	246,524	10,936,344	2,172,066	13,778,020
1962	10,145	N/A	411,748	239,382	10,139,595	1,593,386	12,394,256
1963	6,659	N/A	422,633	316,491	18,189,644	1,186,260	20,121,687
1964	16,819	N/A	570,666	506,505	17,310,850	1,662,135	20,066,975
1965	14,992	N/A	672,015	557,005	10,061,603	1,185,571	12,491,186
1966	11,877	N/A	480,519	452,057	18,919,555	2,846,668	22,710,676
1967	9,054	N/A	600,628	188,965	2,807,783	1,545,059	5,151,489
1968	13,335	N/A	494,998	463,553	24,099,793	2,252,605	27,324,284
1969	6,730	N/A	338,217	109,956	4,312,402	332,679	5,099,984
1970	5,954	N/A	307,814	294,574	9,629,162	1,936,903	12,174,407
1971	4,799	N/A	162,823	326,264	8,505,647	1,496,399	10,495,932
1972	16,800	N/A	323,966	390,343	11,370,835	2,169,523	14,271,467
1973	8,751	N/A	348,679	129,593	5,609,519	1,219,552	7,316,094
1974	6,759	N/A	235,934	166,687	4,174,219	999,601	5,583,200
1975	2,056	N/A	61,878	70,201	3,410,938	381,307	3,926,380
1976	1,426	N/A	135,823	87,604	4,287,516	512,777	5,025,146
1977	5,243	N/A	329,396	160,519	11,600,431	342,322	12,437,911
1978	13,998	N/A	274,238	245,074	19,044,766	529,779	20,107,855
1979	10,079	N/A	397,448	176,593	9,000,060	441,686	10,025,866
1980	11,704	N/A	515,127	185,479	12,334,324	1,019,363	14,065,997
1981	10,268	N/A	440,237	238,502	16,514,018	521,749	17,724,774
1982	31,183	N/A	459,628	431,804	22,436,252	839,356	24,198,223
1983	13,581	N/A	781,719	360,287	34,651,168	582,666	36,389,421
1984	20,777	N/A	466,719	361,325	21,571,738	2,460,774	24,881,333
1985	23,120	N/A	720,787	422,636	47,719,676	1,861,639	50,747,858
1986	12,203	1,158	592,766	588,642	43,623,539	2,213,427	47,031,735
1987	4,510	1,787	311,240	131,458	7,059,644	1,252,791	8,761,430
1988	11,134	1,034	657,104	158,428	9,321,575	1,636,368	11,785,643
1989	13,168	4,461	837,032	332,888	53,267,309	1,090,872	55,545,730
1990	11,373	3,454	973,634	379,336	28,393,542	1,070,871	30,832,210
1991	11,618	5,585	1,056,258	411,240	59,141,387	2,131,625	62,757,713
1992	18,327	2,296	1,340,641	504,839	30,072,160	3,215,988	35,154,251
Average 1960 to 1992							
	11,184	2,825*	499,999	295,777	17,942,099	1,376,660	20,126,318
Preliminary 1993							
	8,659	3,939	1,706,824	473,918	54,092,348	4,564,607	60,850,295

N/A = Not Available

* Average 1986 to 1993

Table 3. Southeast Alaska commercial purse seine salmon catches by area, in numbers, by species, 1993.

	Chinook ≥28"	≤21"	Sockeye	Coho	Pink	Chum	Total
District 1 (traditional)	399	87	330,482	33,811	6,665,070	393,637	7,423,486
Nakat Inlet (hatchery terminal area)	0	0	440	786	59,709	37,004	97,939
Annette Island	30	0	14,807	2,356	735,899	7,767	760,859
District 2 (traditional)	184	59	123,893	57,565	6,122,004	344,640	6,648,345
District 3 (traditional)	323	1	50,560	61,617	6,772,305	89,854	6,974,660
District 4 (traditional)	4,617	227	945,285	170,478	11,620,309	581,161	13,322,077
District 5 (traditional)	80	25	33,932	18,792	3,223,561	37,270	3,313,660
District 6 (traditional)	0	0	0	0	0	0	0
District 7 (traditional)	18	111	43,597	14,363	2,010,101	68,888	2,137,078
Earl West Cove (hatchery terminal area)	1,145	0	2	474	6	414	2,041
District 9 (traditional)	159	246	33,645	50,732	5,093,374	276,163	5,454,319
District 10 (traditional)	0	648	11,633	1,292	181,437	73,299	268,309
District 11 (traditional)	0	0	0	0	0	0	0
District 12 (traditional)	458	983	64,054	36,650	6,875,180	538,246	7,515,571
Hidden Falls (hatchery terminal area)	1,075	1,372	15,982	8,076	1,979,613	1,471,472	3,477,590
District 13 (traditional)	137	161	29,126	8,790	1,428,005	131,369	1,597,588
Deep Inlet (hatchery terminal area)	29	14	425	3,167	58,834	450,457	512,926
District 14 (traditional)	5	5	8,961	4,969	1,266,941	62,966	1,343,847
Southern Subtotals							
Traditional	5,621	510	1,527,749	356,626	36,413,350	1,515,450	39,819,306
Hatchery Terminal Area	1,145	0	442	1,260	59,715	37,418	99,980
Annette Island	30	0	14,807	2,356	735,899	7,767	760,859
Northern Subtotals							
Traditional	759	2,043	147,419	102,433	14,844,937	1,082,043	16,179,634
Hatchery Terminal Area	1,104	1,386	16,407	11,243	2,038,447	1,921,929	3,990,516
Total Southeast							
Traditional	6,380	2,553	1,675,168	459,059	51,258,287	2,597,493	55,998,940
Hatchery Terminal Area	2,249	1,386	16,849	12,503	2,098,162	1,959,347	4,090,496
Annette Island	30	0	14,807	2,356	735,899	7,767	760,859

Table 4. Northern Southeast Alaska annual commercial purse seine salmon catches, in numbers, by species, 1960 to 1993.

Year	Chinook		Sockeye	Coho	Pink	Chum	Total
	>=28"	>=21"					
1960	1,377	N/A	193,185	40,578	1,208,645	344,005	1,787,790
1961	2,738	N/A	306,490	98,626	7,545,647	1,276,238	9,229,739
1962	3,308	N/A	190,704	44,844	450,906	779,813	1,469,575
1963	3,992	N/A	241,483	145,899	13,772,188	697,716	14,862,278
1964	6,155	N/A	259,808	179,568	7,184,778	615,968	8,246,277
1965	6,451	N/A	353,618	243,509	5,106,087	949,074	6,658,739
1966	6,071	N/A	273,071	170,354	4,720,620	2,277,117	7,447,233
1967	2,349	N/A	213,594	120,294	2,358,831	1,317,519	4,012,587
1968	4,665	N/A	336,407	208,564	9,729,290	1,167,207	11,446,133
1969	4,173	N/A	270,034	87,731	3,453,139	297,203	4,112,280
1970	3,686	N/A	236,663	165,940	4,972,826	1,408,347	6,787,462
1971	2,595	N/A	113,699	127,703	2,911,913	866,044	4,021,954
1972	5,998	N/A	157,942	155,628	3,026,945	1,394,570	4,741,083
1973	4,059	N/A	181,604	56,225	1,741,261	634,047	2,617,196
1974	1,559	N/A	66,858	27,415	514,119	440,342	1,050,293
1975	108	N/A	5,471	2,185	585,294	66,959	660,017
1976	12	N/A	19,126	1,744	80,775	55,005	156,662
1977	233	N/A	17,674	20,194	2,064,103	30,357	2,132,561
1978	501	N/A	36,641	9,101	2,398,505	39,990	2,484,738
1979	797	N/A	36,311	19,990	3,198,769	226,125	3,481,992
1980	512	N/A	29,879	12,378	902,071	415,511	1,360,351
1981	2,280	N/A	60,750	44,016	4,428,712	282,754	4,818,512
1982	3,643	N/A	79,970	135,333	10,689,058	162,036	11,070,040
1983	2,796	N/A	60,516	54,457	5,323,568	269,846	5,711,183
1984	1,808	N/A	53,308	48,703	4,159,670	1,473,603	5,737,092
1985	7,999	N/A	99,227	77,576	19,338,817	1,011,963	20,535,582
1986	752	633	18,592	17,786	933,601	947,510	1,918,874
1987	650	1,039	77,238	28,492	3,858,685	833,667	4,799,771
1988	621	520	13,323	24,970	1,301,041	653,007	1,993,482
1989	547	2,191	98,328	56,535	11,969,624	336,503	12,463,728
1990	490	1,217	38,502	43,384	4,082,182	603,299	4,769,074
1991	1,854	2,911	72,161	105,932	16,976,376	1,064,287	18,223,521
1992	795	1,979	108,666	162,863	12,542,958	1,950,033	14,767,294
Average 1960-1992							
	2,593	1,499	130,935	83,016	5,258,515	754,172	6,229,548
Preliminary 1993							
	1,863	3,429	163,826	113,676	16,883,384	3,003,972	20,170,150

N/A = Not Available

Table 5. Northern Southeast Alaska pink salmon spawning escapement index, by district and year, 1960 to 1993.

Year	109	110	111	112	113	114	115	Total
1960	116,507	258,417	339,325	192,005	365,565	128,931	19,901	1,420,651
1961	473,110	382,484	465,385	514,959	711,835	215,163	72,360	2,835,296
1962	477,778	425,495	290,287	194,470	349,166	196,235	23,490	1,956,921
1963	545,565	319,735	436,413	844,901	1,311,416	549,286	25,650	4,032,966
1964	705,460	497,550	400,373	470,200	532,286	125,771	10,800	2,742,440
1965	670,900	238,048	322,578	472,466	768,328	406,669	0	2,878,989
1966	728,756	549,500	513,337	642,936	529,276	109,546	2,700	3,076,051
1967	436,847	196,146	270,465	335,281	577,923	179,435	15,255	2,011,352
1968	701,722	966,116	476,213	546,877	310,460	155,089	47,250	3,203,727
1969	397,370	288,980	218,931	465,749	770,712	255,344	22,897	2,419,983
1970	476,673	522,020	448,846	518,715	379,789	164,774	54,170	2,564,987
1971	533,133	576,473	306,941	499,233	600,106	392,115	0	2,908,001
1972	451,761	690,421	594,141	553,541	345,027	193,944	0	2,828,835
1973	309,487	285,872	268,037	487,909	600,917	258,1577	1,550	2,281,929
1974	291,744	272,527	429,787	321,228	441,701	123,090	0	1,880,077
1975	211,056	74,037	139,149	296,644	669,543	146,830	29,750	1,567,009
1976	223,739	163,536	107,967	231,489	520,796	125,810	27	1,373,364
1977	560,841	247,957	328,991	644,740	2,082,431	237,325	50,247	4,152,532
1978	447,360	413,769	181,865	819,664	908,571	194,070	108	2,965,407
1979	812,972	729,235	485,602	717,218	1,995,662	239,716	71,988	5,052,393
1980	462,763	397,892	319,117	550,499	610,970	227,954	82,270	2,651,465
1981	431,170	370,093	244,688	612,112	1,960,006	234,140	45,360	3,897,569
1982	757,824	590,506	451,872	738,340	1,139,190	195,932	49,601	3,923,265
1983	580,471	358,403	422,663	687,269	1,913,146	261,587	62,536	4,286,075
1984	730,500	409,358	465,771	479,698	1,605,190	213,129	70,365	3,974,011
1985	1,135,524	1,050,671	1,074,865	1,168,254	2,759,386	568,571	282,767	8,040,038
1986	731,448	270,377	245,369	659,601	767,532	170,350	3,810	2,848,487
1987	588,546	1,085,859	889,285	517,383	948,355	160,508	82,902	4,272,838
1988	621,369	469,130	326,043	641,769	576,384	195,269	59,130	2,889,094
1989	786,571	991,768	632,277	787,499	996,507	192,689	71,822	4,459,133
1990	597,013	1,058,618	369,370	607,486	870,923	187,760	119,702	3,810,872
1991	1,118,530	1,051,421	306,833	1,037,528	1,436,044	220,886	24,899	5,196,141
1992	987,099	1,094,130	583,169	1,077,513	1,278,763	191,384	75,915	5,287,973
1993	917,930	574,310	251,311	1,390,354	1,333,964	555,578	50,980	5,074,427
GOAL	600,000	1,000,000	500,000	600,000	1,600,000	500,000	-	4,800,000

Table 6. Southern Southeast Alaska annual commercial purse seine salmon catches, in numbers, by species, 1960 to 1993.

Year	Chinook ≥28"	Chinook ≤21"	Sockeye	Coho	Pink	Chum	Total
1960	5,132	N/A	165,512	85,293	1,363,634	382,012	2,001,583
1961	1,396	N/A	112,462	147,898	3,390,697	895,828	4,548,281
1962	6,837	N/A	221,044	194,538	9,688,689	813,573	10,924,681
1963	2,667	N/A	181,150	169,592	4,417,456	488,544	5,259,409
1964	10,664	N/A	310,858	326,937	10,126,072	1,046,167	11,820,698
1965	8,541	N/A	318,397	313,496	4,955,516	236,497	5,832,447
1966	5,806	N/A	207,448	281,703	14,198,935	569,551	15,263,443
1967	6,705	N/A	387,034	68,671	448,952	227,540	1,138,902
1968	8,670	N/A	158,591	254,989	14,370,503	1,085,398	15,878,151
1969	2,557	N/A	68,183	22,225	859,263	35,476	987,704
1970	2,268	N/A	71,151	128,634	4,656,336	528,556	5,386,945
1971	2,204	N/A	49,124	198,561	5,593,734	630,355	6,473,978
1972	10,802	N/A	166,024	234,715	8,343,890	774,953	9,530,384
1973	4,692	N/A	167,075	73,368	3,868,258	585,505	4,698,898
1974	5,200	N/A	169,076	139,272	3,660,100	559,259	4,532,907
1975	1,948	N/A	56,407	68,016	2,825,644	314,348	3,266,363
1976	1,414	N/A	116,697	85,860	4,206,741	457,772	4,868,484
1977	5,010	N/A	311,722	140,325	9,536,328	311,965	10,305,350
1978	13,497	N/A	237,597	235,973	16,646,261	489,789	17,623,117
1979	9,282	N/A	361,137	156,603	5,801,291	215,561	6,543,874
1980	11,192	N/A	485,248	173,101	11,432,253	603,852	12,705,646
1981	7,988	N/A	379,487	194,486	12,085,306	238,995	12,906,262
1982	27,540	N/A	379,658	296,471	11,747,194	677,320	13,128,183
1983	10,785	N/A	721,203	305,830	29,327,600	312,820	30,678,238
1984	18,969	N/A	413,411	312,622	17,412,068	987,171	19,144,241
1985	15,121	N/A	621,560	345,060	28,380,859	849,676	30,212,276
1986	11,451	525	574,174	570,856	42,689,938	1,265,917	45,112,861
1987	3,860	748	234,002	102,966	3,200,959	419,124	3,961,659
1988	10,513	514	643,781	133,458	8,020,534	983,361	9,792,161
1989	12,621	2,270	738,704	276,353	41,297,685	754,369	43,082,002
1990	10,883	2,237	935,132	335,952	24,311,360	467,572	26,063,136
1991	9,764	2,674	984,097	305,308	42,165,011	1,067,338	44,534,192
1992	17,532	317	1,231,975	341,976	17,529,202	1,265,955	20,386,957
Average 1960 to 1992							
	8,591	1,326	369,064	212,761	12,683,584	622,488	13,896,770
Preliminary 1993							
	6,796	510	1,542,998	360,242	37,208,964	1,560,635	40,680,145

N/A = Not Available

Table 7. Southern Southeast Alaska pink salmon spawning escapement index, by district and year, 1960 to 1993.

Year	101	102	103	105	106	107	108	Total
1960	726,020	210,776	928,350	156,136	69,119	239,301	36,000	2,329,702
1961	611,341	127,287	677,952	265,630	483,585	178,751	110,900	2,344,546
1962	1,220,747	355,825	1,273,828	468,526	518,150	421,000	59,400	4,258,076
1963	1,065,132	271,115	1,122,225	424,052	369,775	468,913	160,500	3,721,212
1964	1,273,469	532,704	1,253,950	547,965	663,449	453,203	118,703	4,724,740
1965	687,106	279,820	1,078,362	614,122	485,500	290,350	34,830	3,435,260
1966	1,496,930	616,668	1,315,405	537,150	647,696	495,020	0	5,108,869
1967	563,241	94,037	384,967	412,298	166,842	154,067	81,000	1,775,452
1968	1,837,225	544,322	1,094,890	499,324	406,259	388,769	92,693	4,770,789
1969	726,072	328,862	333,985	218,013	161,858	168,864	67,906	1,937,654
1970	1,508,615	264,761	1,439,322	229,459	248,866	348,733	73,860	4,039,756
1971	1,353,991	649,546	1,604,638	385,944	369,310	476,658	40,004	4,840,087
1972	1,651,100	354,146	915,956	283,570	229,440	442,248	113,834	3,876,460
1973	911,847	512,260	853,001	281,731	350,016	393,633	66,825	3,302,488
1974	1,293,850	480,440	1,155,955	201,088	201,353	325,146	39,825	3,657,832
1975	1,439,667	664,546	1,449,408	291,394	352,581	467,228	18,314	4,664,824
1976	1,523,782	706,470	1,556,397	154,703	663,544	685,745	15,797	5,290,641
1977	2,252,755	690,351	1,616,768	263,381	358,462	949,824	45,332	6,131,541
1978	2,157,453	569,293	1,685,581	292,617	289,082	439,422	21,063	5,433,448
1979	1,062,770	675,036	1,607,025	459,211	381,886	467,305	91,388	4,653,233
1980	2,360,089	686,073	2,506,575	147,830	156,533	358,830	26,569	6,215,930
1981	1,862,171	641,621	2,460,622	394,647	244,402	281,105	31,611	5,884,568
1982	2,199,570	582,615	2,098,555	256,100	341,520	457,980	69,674	5,936,340
1983	2,789,250	998,214	3,230,366	535,809	266,990	374,643	26,382	8,195,272
1984	3,685,157	956,239	3,334,059	266,360	311,923	409,202	28,196	8,962,940
1985	3,854,308	1,167,087	4,791,491	699,921	866,369	976,802	83,650	12,355,978
1986	4,528,205	1,761,475	5,841,107	676,983	820,020	590,321	40,798	14,218,111
1987	2,249,846	518,155	1,998,696	174,317	216,341	337,638	96,378	5,494,993
1988	1,558,852	573,143	1,506,894	171,101	250,399	300,444	65,484	4,360,833
1989	2,850,941	883,842	2,954,216	406,398	575,122	882,604	125,856	8,553,123
1990	2,171,659	1,107,557	2,362,241	397,298	519,436	431,244	113,805	6,989,435
1991	2,039,634	606,060	2,764,874	660,180	478,714	631,436	157,454	7,180,898
1992	3,108,745	951,259	1,909,209	168,650	236,157	525,059	89,099	6,899,079
1993	2,186,455	962,150	2,981,556	635,778	613,562	504,900	69,307	7,884,401
GOAL	2,000,000	600,000	1,700,000	500,000	600,000	600,000	-	6,000,000

Table 8. Southeast Alaska commercial drift gillnet fishing time by area and hours open per day, 1993.

Stat. Week	Date	Day/ Week	District or Section													Terminal Hatchery Area				
			1-A	1-B	1-F	6-A	6-B	6-C	6-D	8-A	8-B	11-B	11-C	15-A	15-B	15-C	Earl West	Nakat Inlet	Ohmer Creek	Wrangell Narrows
23	30-May Sun.		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	31-May Mon.		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	01-Jun Tues.		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	02-Jun Wed.		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	03-Jun Thurs.		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	04-Jun Fri.		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	05-Jun Sat.		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
24	06-Jun Sun.		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	07-Jun Mon.		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	12	-	-
	08-Jun Tues.		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	24	-	-
	09-Jun Wed.		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	12	-	-
	10-Jun Thurs.		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	11-Jun Fri.		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	12-Jun Sat.		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
25	13-Jun Sun.		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	14-Jun Mon.		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	12	-	-
	15-Jun Tues.		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	24	-	-
	16-Jun Wed.		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	12	-	-
	17-Jun Thurs.		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	18-Jun Fri.		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	19-Jun Sat.		-	-	-	-	-	-	-	-	-	-	-	-	-	12	-	-	-	-
26	20-Jun Sun.		-	12	-	12	12	12	12	12	12	-	12	-	12	12	-	-	-	-
	21-Jun Mon.		-	24	-	24	24	24	24	24	24	-	24	-	24	-	-	12	-	-
	22-Jun Tues.		-	24	-	12	12	12	12	12	24	-	12	-	12	12	-	24	-	-
	23-Jun Wed.		-	24	-	-	-	-	-	-	18	-	-	-	-	12	-	12	-	-
	24-Jun Thurs.		-	12	-	-	-	-	-	-	24	-	-	-	-	-	-	-	-	-
	25-Jun Fri.		-	-	-	-	-	-	-	-	18	-	-	-	-	12	-	-	-	-
	26-Jun Sat.		-	-	-	-	-	-	-	-	-	-	-	-	-	12	-	-	-	-

-Continued-

Table 8. (page 2 of 6).

Stat. Week	Date	Day/ Week	District or Section													Terminal Hatchery Area				
			1-A	1-B	1-F	6-A	6-B	6-C	6-D	8-A	8-B	11-B	11-C	15-A	15-B	15-C	Earl West	Nakat Inlet	Ohmer Creek	Wrangell Narrows
27	27-Jun Sun.	-	12	-	12	12	12	12	12	12	12	-	12	-	12	-	-	-	-	-
	28-Jun Mon.	-	24	-	24	24	24	24	24	24	24	-	24	-	24	12	-	12	-	-
	29-Jun Tues.	-	24	-	12	12	12	12	12	12	24	-	12	-	12	12	-	24	-	-
	30-Jun Wed.	-	24	-	-	-	-	-	12	12	18	-	-	-	-	-	-	12	-	-
	01-Jul Thurs.	-	12	-	-	-	-	-	24	24	18	-	-	-	-	12	-	-	-	-
	02-Jul Fri.	-	-	-	-	-	-	-	12	12	-	-	-	-	-	12	-	-	-	-
	03-Jul Sat.	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
28	04-Jul Sun.	-	12	-	12	12	12	12	12	12	12	-	12	-	12	12	-	-	-	-
	05-Jul Mon.	-	24	-	24	24	24	24	24	24	24	-	24	-	24	12	-	12	-	-
	06-Jul Tues.	-	24	-	12	12	12	12	12	12	24	-	12	-	24	-	-	24	-	-
	07-Jul Wed.	-	12	-	-	-	-	-	12	12	24	-	-	-	24	12	-	24	-	-
	08-Jul Thurs.	-	-	-	-	-	-	-	24	24	24	-	-	-	12	12	-	12	-	-
	09-Jul Fri.	-	-	-	-	-	-	-	12	12	18	-	-	-	-	-	-	-	-	-
	10-Jul Sat.	-	-	-	-	-	-	-	-	-	-	-	-	-	-	12	-	-	-	-
29	11-Jul Sun.	-	12	-	12	12	12	12	12	12	12	-	12	-	12	12	-	-	-	-
	12-Jul Mon.	-	24	-	24	24	24	24	24	24	24	-	24	-	24	-	-	-	-	-
	13-Jul Tues.	-	24	-	12	12	12	12	12	12	24	-	12	-	12	12	-	-	-	-
	14-Jul Wed.	-	12	-	-	-	-	-	12	12	24	-	-	-	-	12	-	-	-	-
	15-Jul Thurs.	-	-	-	-	-	-	-	24	24	12	-	-	-	-	-	-	-	-	19
	16-Jul Fri.	-	-	-	-	-	-	-	24	24	-	-	-	-	-	12	12	-	-	24
	17-Jul Sat.	-	-	-	-	-	-	-	12	12	-	-	-	-	-	12	12	-	-	21
30	18-Jul Sun.	-	12	-	12	12	12	12	12	12	12	-	12	-	12	-	-	-	-	-
	19-Jul Mon.	-	24	-	24	24	24	24	24	24	24	-	24	-	24	12	-	-	-	-
	20-Jul Tues.	-	24	-	12	12	12	12	12	12	24	-	12	-	12	12	-	-	-	-
	21-Jul Wed.	-	24	-	-	-	-	-	12	12	24	-	-	-	-	-	12	-	-	-
	22-Jul Thurs.	-	12	-	-	-	-	-	24	24	12	-	-	-	-	12	12	-	-	19
	23-Jul Fri.	-	-	-	-	-	-	-	24	24	-	-	-	-	-	12	-	-	-	24
	24-Jul Sat.	-	-	-	-	-	-	-	12	12	-	-	-	-	-	-	-	-	-	21

-Continued-

Table 8. (page 3 of 6).

Stat. Week	Day/ Date	Week	District or Section													Terminal Hatchery Area				
			1-A	1-B	1-F	6-A	6-B	6-C	6-D	8-A	8-B	11-B	11-C	15-A	15-B	15-C	Earl West	Nakat Inlet	Ohmer Creek	Wrangell Narrows
31	25-Jul Sun.	-	12	-	12	12	12	12	12	12	12	-	12	-	12	12	-	-	-	-
	26-Jul Mon.	-	24	-	24	24	24	24	24	24	24	-	24	-	24	12	12	-	-	-
	27-Jul Tues.	-	24	-	24	24	24	24	24	24	24	-	12	-	12	-	12	-	-	-
	28-Jul Wed.	-	24	-	12	12	12	12	12	12	12	-	-	-	-	12	-	-	-	-
	29-Jul Thurs.	-	24	-	-	-	-	-	12	12	-	-	-	-	-	12	-	-	-	19
	30-Jul Fri.	-	12	-	-	-	-	-	24	24	-	-	-	-	-	-	-	-	-	24
	31-Jul Sat.	-	-	-	-	-	-	-	12	12	-	-	-	-	-	12	12	-	-	21
32	01-Aug Sun.	-	12	-	12	12	12	-	12	12	12	-	12	-	12	12	12	-	-	-
	02-Aug Mon.	-	24	-	24	24	24	-	24	24	24	-	24	-	24	-	-	-	-	-
	03-Aug Tues.	-	24	-	24	24	24	-	24	24	24	-	12	-	12	12	-	-	-	-
	04-Aug Wed.	-	24	-	12	12	12	-	12	12	12	-	-	-	-	12	-	-	-	-
	05-Aug Thurs.	-	24	-	-	-	-	-	12	12	-	-	-	-	-	-	12	-	-	19
	06-Aug Fri.	-	12	-	-	-	-	-	24	24	-	-	-	-	-	12	12	-	-	24
	07-Aug Sat.	-	-	-	-	-	-	-	12	12	-	-	-	-	-	12	-	-	-	21
33	08-Aug Sun.	-	12	-	12	12	12	-	12	12	12	-	12	-	12	-	-	-	-	-
	09-Aug Mon.	-	24	-	24	24	24	-	24	24	24	-	24	-	24	12	-	-	-	-
	10-Aug Tues.	-	24	-	24	24	24	-	24	24	24	-	12	-	12	12	12	-	-	-
	11-Aug Wed.	-	24	-	12	12	12	-	12	12	12	-	-	-	-	-	12	-	-	-
	12-Aug Thurs.	-	24	-	-	-	-	-	-	-	-	-	-	-	-	12	-	-	-	19
	13-Aug Fri.	-	12	-	-	-	-	-	-	-	-	-	-	-	-	12	-	-	-	24
	14-Aug Sat.	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	21
34	15-Aug Sun.	-	12	-	12	12	12	-	12	12	-	-	-	-	-	12	12	-	-	-
	16-Aug Mon.	-	24	-	24	24	24	-	24	24	12	-	12	-	-	12	12	-	-	-
	17-Aug Tues.	-	24	-	24	24	24	-	24	24	24	-	24	-	-	-	-	-	-	-
	18-Aug Wed.	-	24	-	12	12	12	-	12	12	24	-	24	-	-	12	-	-	-	-
	19-Aug Thurs.	-	24	-	-	-	-	-	-	-	12	-	12	-	-	12	-	-	-	19
	20-Aug Fri.	-	12	-	-	-	-	-	-	-	-	-	-	-	-	-	12	-	-	24
	21-Aug Sat.	-	-	-	-	-	-	-	-	-	-	-	-	-	-	12	12	-	-	21

-Continued-

Table 8. (page 4 of 6).

Stat. Week	Date	Day/ Week	District or Section													Terminal Hatchery Area				
			1-A	1-B	1-F	6-A	6-B	6-C	6-D	8-A	8-B	11-B	11-C	15-A	15-B	15-C	Earl West	Nakat Inlet	Ohmer Creek	Wrangell Narrows
35	22-Aug Sun.	-	12	-	12	12	12	-	12	12	12	-	12	-	-	12	-	-	-	-
	23-Aug Mon.	-	24	-	24	24	24	-	24	24	24	-	24	-	-	-	-	-	-	-
	24-Aug Tues.	-	24	-	24	24	24	-	24	24	12	-	24	-	-	12	-	-	-	-
	25-Aug Wed.	-	24	-	12	12	12	-	12	12	-	-	12	-	-	12	12	-	-	-
	26-Aug Thurs.	-	24	-	-	-	-	-	-	-	-	-	-	-	-	-	12	-	-	19
	27-Aug Fri.	-	12	-	-	-	-	-	-	-	-	-	-	-	-	12	-	-	-	24
	28-Aug Sat.	-	-	-	-	-	-	-	-	-	-	-	-	-	-	12	-	-	-	21
36	29-Aug Sun.	-	12	-	12	12	12	-	12	12	12	-	12	-	12	-	-	-	-	-
	30-Aug Mon.	-	24	-	24	24	24	-	24	24	24	-	24	-	24	12	12	-	15	-
	31-Aug Tues.	-	24	-	24	24	24	-	24	24	12	-	12	-	12	12	12	-	15	-
	01-Sep Wed.	-	24	-	12	12	12	-	12	12	-	-	-	-	-	-	-	-	-	-
	02-Sep Thurs.	-	24	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	15
	03-Sep Fri.	-	12	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	15
	04-Sep Sat.	-	-	-	-	-	-	-	-	-	-	-	-	-	-	12	12	-	-	-
37	05-Sep Sun.	-	12	-	12	12	12	-	-	-	12	-	12	-	12	12	12	-	-	-
	06-Sep Mon.	-	24	-	24	24	24	-	-	-	12	-	24	-	24	-	-	-	15	-
	07-Sep Tues.	-	12	-	20	12	12	-	-	-	-	-	12	-	12	12	-	-	15	-
	08-Sep Wed.	-	-	-	-	-	-	-	-	-	-	-	-	-	-	12	-	-	-	-
	09-Sep Thurs.	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	12	-	-	15
	10-Sep Fri.	-	-	-	-	-	-	-	-	-	-	-	-	-	-	12	12	-	-	15
	11-Sep Sat.	-	-	-	-	-	-	-	-	-	-	-	-	-	-	12	-	-	-	-
38	12-Sep Sun.	-	12	-	12	12	12	12	-	-	12	-	12	-	12	-	-	-	-	-
	13-Sep Mon.	-	24	-	24	24	24	24	-	-	24	-	24	-	24	12	-	-	15	15
	14-Sep Tues.	-	12	-	20	12	12	12	-	-	12	-	12	-	12	12	12	-	15	15
	15-Sep Wed.	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	12	-	-	-
	16-Sep Thurs.	-	-	-	-	-	-	-	-	-	-	-	-	-	-	12	-	-	-	15
	17-Sep Fri.	-	-	-	-	-	-	-	-	-	-	-	-	-	-	12	-	-	-	15
	18-Sep Sat.	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

-Continued-

Table 8. (page 5 of 6).

Stat. Week	Date	Day/ Week	District or Section													Terminal Hatchery Area					
			1-A	1-B	1-F	6-A	6-B	6-C	6-D	8-A	8-B	11-B	11-C	15-A	15-B	15-C	Earl West	Nakat Inlet	Ohmer Creek	Wrangell Narrows	Deep Inlet
39	19-Sep Sun.	Sun.	-	12	-	12	12	12	12	12	12	12	-	-	-	12	12	12	-	-	15
	20-Sep Mon.	Mon.	-	24	-	24	24	24	24	24	24	24	-	-	-	24	12	12	-	-	15
	21-Sep Tues.	Tues.	-	12	-	24	24	24	24	24	24	24	-	-	-	24	-	-	-	-	-
	22-Sep Wed.	Wed.	-	-	-	12	12	12	12	12	12	12	-	-	-	12	12	-	-	-	-
	23-Sep Thurs.	Thurs.	-	-	-	-	-	-	-	-	-	-	-	-	-	-	12	-	-	-	12
	24-Sep Fri.	Fri.	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	12	-	-	12
	25-Sep Sat.	Sat.	-	-	-	-	-	-	-	-	-	-	-	-	-	-	12	12	-	-	-
40	26-Sep Sun.	Sun.	-	-	-	12	12	12	12	12	12	12	-	-	-	12	12	-	-	-	12
	27-Sep Mon.	Mon.	-	-	-	24	24	24	24	24	24	24	-	-	-	24	-	-	-	-	12
	28-Sep Tues.	Tues.	-	-	-	12	12	12	12	12	12	24	-	-	-	24	12	-	-	-	-
	29-Sep Wed.	Wed.	-	-	-	-	-	-	-	-	-	12	-	-	-	12	12	12	-	-	-
	30-Sep Thurs.	Thurs.	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	12	-	-	-
	01-Oct Fri.	Fri.	-	-	-	-	-	-	-	-	-	-	-	-	-	-	12	-	-	-	-
	02-Oct Sat.	Sat.	-	-	-	-	-	-	-	-	-	-	-	-	-	-	12	-	-	-	-
41	03-Oct Sun.	Sun.	-	-	-	12	12	12	12	12	12	-	-	-	-	12	-	12	-	-	-
	04-Oct Mon.	Mon.	-	-	-	12	12	12	12	12	12	-	-	-	-	24	12	12	-	-	-
	05-Oct Tues.	Tues.	-	-	-	-	-	-	-	-	-	-	-	-	-	12	12	-	-	-	-
	06-Oct Wed.	Wed.	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	07-Oct Thurs.	Thurs.	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	08-Oct Fri.	Fri.	-	-	-	-	-	-	-	-	-	-	-	-	-	-	12	12	-	-	-
	09-Oct Sat.	Sat.	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	12	-	-	-
42	10-Oct Sun.	Sun.	-	-	-	-	-	-	-	-	-	-	-	-	-	-	12	-	-	-	-
	11-Oct Mon.	Mon.	-	-	-	-	-	-	-	-	-	-	-	-	-	-	12	-	-	-	-
	12-Oct Tues.	Tues.	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	13-Oct Wed.	Wed.	-	-	-	-	-	-	-	-	-	-	-	-	-	-	12	12	-	-	-
	14-Oct Thurs.	Thurs.	-	-	-	-	-	-	-	-	-	-	-	-	-	-	12	12	-	-	-
	15-Oct Fri.	Fri.	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	16-Oct Sat.	Sat.	-	-	-	-	-	-	-	-	-	-	-	-	-	-	12	-	-	-	-

-Continued-

Table 8. (page 6 of 6).

Stat. Week	Date	Day/ Week	District or Section													Terminal Hatchery Area				
			1-A	1-B	1-F	6-A	6-B	6-C	6-D	8-A	8-B	11-B	11-C	15-A	15-B	15-C	Earl West	Nakat Inlet	Ohmer Creek	Wrangell Narrows
43	17-Oct	Sun.	-	-	-	-	-	-	-	-	-	-	-	-	-	-	12	-	-	-
	18-Oct	Mon.	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	12	-	-
	19-Oct	Tues.	-	-	-	-	-	-	-	-	-	-	-	-	-	-	12	12	-	-
	20-Oct	Wed.	-	-	-	-	-	-	-	-	-	-	-	-	-	-	12	-	-	-
	21-Oct	Thurs.	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	22-Oct	Fri.	-	-	-	-	-	-	-	-	-	-	-	-	-	-	12	-	-	-
	23-Oct	Sat.	-	-	-	-	-	-	-	-	-	-	-	-	-	-	12	12	-	-
44	24-Oct	Sun.	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	12	-	-
	25-Oct	Mon.	-	-	-	-	-	-	-	-	-	-	-	-	-	-	12	-	-	-
	26-Oct	Tues.	-	-	-	-	-	-	-	-	-	-	-	-	-	-	12	-	-	-
	27-Oct	Wed.	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	28-Oct	Thurs.	-	-	-	-	-	-	-	-	-	-	-	-	-	-	12	-	-	-
	29-Oct	Fri.	-	-	-	-	-	-	-	-	-	-	-	-	-	-	12	-	-	-
	30-Oct	Sat.	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Table 9. Southeast Alaska commercial drift gillnet salmon catches by area, in numbers, by species, 1993.

Area	Chinook	Sockeye	Coho	Pink	Chum	Total
Tree Point (District 1)	1,249	393,996	32,488	480,963	383,285	1,291,981
Nakat Inlet (hatchery terminal area)	0	39	80	144	6,506	6,769
Annette Island	268	76,054	13,362	456,244	54,003	599,931
Prince of Wales (District 6)	992	205,955	231,038	537,954	134,601	1,110,540
Wrangell Narrows (hatchery terminal area)	3	11	1,820	39	34	1,907
Earl West Cove (hatchery terminal area)	6,400	165	6,993	49	7,874	21,481
Stikine (District 8)	1,628	76,874	14,307	39,661	22,504	154,974
Ohmer Creek (hatchery terminal area)	171	0	0	0	0	171
Taku/Snettisham (District 11)	6,721	171,453	64,138	17,103	166,388	425,803
Deep Inlet (hatchery terminal area)	79	260	5,338	226	371,090	376,993
Lynn Canal (District 15)	741	172,990	59,103	11,336	306,248	550,418
Subtotals						
Traditional	11,331	1,021,268	401,074	1,087,017	1,013,026	3,533,716
Hatchery Terminal Areas	6,653	475	14,231	458	385,504	407,321
Annette Island	268	76,054	13,362	456,244	54,003	599,931
Total	18,252	1,097,797	428,667	1,543,719	1,452,533	4,540,968

Table 10. Southeast Alaska annual commercial drift gillnet salmon catches, in numbers, by species, 1960 to 1993.

Year	Chinook	Sockeye	Coho	Pink	Chum	Total
1960	11,523	127,058	37,986	55,984	199,887	432,438
1961	9,440	169,724	52,743	282,997	251,900	766,804
1962	10,161	233,082	98,404	435,132	233,421	1,010,200
1963	6,427	194,420	112,776	653,826	265,251	1,232,700
1964	9,371	246,250	172,411	753,312	250,045	1,431,389
1965	11,892	279,349	166,452	698,339	269,986	1,426,018
1966	12,527	334,702	155,922	790,314	365,070	1,658,535
1967	16,464	274,038	134,029	205,683	250,050	880,264
1968	12,902	245,875	202,965	607,653	363,761	1,433,156
1969	15,178	348,298	65,053	379,423	209,510	1,017,462
1970	9,460	240,700	163,901	848,376	494,438	1,756,875
1971	15,718	328,774	159,143	654,434	435,737	1,593,806
1972	25,142	449,019	275,393	443,866	744,150	1,937,570
1973	24,471	532,164	124,349	652,692	592,982	1,926,658
1974	15,481	363,857	186,583	338,108	666,336	1,570,365
1975	9,082	108,334	108,321	350,440	297,655	867,832
1976	7,222	322,984	156,469	384,003	503,265	1,373,943
1977	5,600	550,360	183,702	1,500,378	373,516	2,613,556
1978	8,302	374,424	223,321	846,559	305,321	1,757,927
1979	13,827	488,166	83,050	968,580	412,830	1,966,453
1980	5,471	424,071	112,081	1,299,043	587,168	2,427,834
1981	6,528	464,418	119,595	1,478,952	294,596	2,364,089
1982	15,807	791,810	201,337	732,604	476,099	2,217,657
1983	4,904	608,588	218,219	1,422,316	534,083	2,788,110
1984	10,377	616,985	199,211	1,712,213	1,101,858	3,640,644
1985	10,703	881,176	332,920	2,239,002	1,209,953	4,673,754
1986	8,535	686,500	448,766	1,794,962	912,274	3,851,037
1987	8,957	784,214	189,171	1,582,860	834,266	3,399,468
1988	9,655	627,574	170,924	1,051,744	1,258,014	3,117,911
1989	9,982	927,190	255,690	3,592,886	595,556	5,381,304
1990	15,216	811,470	377,844	1,783,436	691,813	3,679,779
1991	19,394	754,022	600,051	1,120,157	788,969	3,282,593
1992	11,711	978,512	699,253	1,956,385	935,562	4,581,423
Average 1960 to 1992						
	11,740	471,761	205,516	1,018,687	536,525	2,244,229
Preliminary 1993						
	18,252	1,097,797	428,667	1,543,719	1,452,533	4,540,968

Table 11. Southeast Alaska annual Portland Canal/Tree Point (District 1 drift gillnet salmon catches, in numbers, by species, 1960 to 1993.

Year	Chinook	Sockeye	Coho	Pink	Chum	Total
1960	1,214	14,281	4,312	19,823	98,971	138,601
1961	907	35,269	4,067	91,803	35,638	167,684
1962	1,498	41,178	12,110	156,302	36,596	247,684
1963	508	22,037	3,110	93,651	41,642	160,948
1964	1,098	47,070	15,707	162,476	79,156	305,507
1965	1,079	53,566	10,675	60,772	21,753	147,845
1966	642	66,063	9,362	275,634	32,818	384,519
1967	2,186	74,071	3,112	82,312	29,017	190,698
1968	589	67,095	17,032	271,972	96,305	452,993
1969	676	89,733	3,154	87,550	20,580	201,693
1970	340	52,765	16,425	516,105	68,097	653,732
1971	778	116,101	5,170	67,013	31,087	220,149
1972	1,296	134,533	35,695	178,387	156,767	506,678
1973	1,008	159,764	18,459	269,749	109,997	558,977
1974	776	113,299	21,327	166,637	81,770	383,809
1975	1,963	25,432	12,631	134,603	32,226	206,855
1976	1,816	118,647	17,574	224,451	39,437	401,925
1977	1,182	192,728	12,173	769,841	84,321	1,060,245
1978	2,591	153,409	47,797	531,879	116,731	852,407
1979	3,654	88,957	6,427	72,687	60,564	232,289
1980	1,531	109,383	19,329	675,424	153,702	959,369
1981	1,448	104,853	19,125	433,735	38,527	597,688
1982	3,532	190,833	28,015	349,227	84,966	656,573
1983	1,113	135,923	41,556	773,126	139,411	1,091,129
1984	1,494	88,390	35,384	720,706	227,817	1,073,791
1985	2,787	172,863	53,019	691,455	256,564	1,176,688
1986	1,267	145,657	63,073	906,424	286,616	1,403,037
1987	2,077	107,595	38,123	583,295	188,917	920,007
1988	2,036	116,240	17,206	231,476	549,179	916,137
1989	1,808	144,936	32,485	1,347,847	299,798	1,826,874
1990	1,710	85,690	42,893	580,555	174,179	885,027
1991	2,077	131,492	70,319	600,529	183,822	988,239
1992	1,059	244,649	40,001	581,208	282,075	1,148,992
Average 1960 to 1992						
	1,507	104,379	23,541	385,111	125,426	639,963
Preliminary 1993						
	1,249	393,996	32,488	480,963	383,285	1,291,981

Table 12. Southeast Alaska annual Prince of Wales (District 6) commercial drift gillnet salmon catches, in numbers, by species, 1960 to 1992.

Year	Chinook	Sockeye	Coho	Pink	Chum	Total
1960	46	10,354	336	1,246	502	12,484
1961	416	20,614	14,934	124,236	64,479	224,679
1962	1,308	47,033	42,276	256,620	59,119	406,356
1963	1,560	80,767	52,103	514,596	90,103	739,129
1964	2,082	76,541	64,654	443,086	44,218	630,581
1965	1,802	87,749	75,728	625,848	27,658	818,785
1966	1,665	89,847	62,823	400,932	40,756	596,023
1967	1,318	86,385	17,670	91,609	26,370	223,352
1968	1,316	64,671	67,151	169,107	61,366	363,611
1969	877	70,318	10,280	197,073	10,903	289,451
1970	785	42,778	35,470	94,892	32,231	206,156
1971	1,336	53,202	48,085	527,975	37,680	668,278
1972	2,573	101,338	93,427	89,467	72,382	359,187
1973	1,931	71,995	38,447	303,621	87,729	503,723
1974	1,927	57,445	45,687	104,549	50,411	260,019
1975	2,587	32,051	30,962	203,015	23,968	292,583
1976	384	15,481	19,126	139,439	6,868	181,298
1977	671	67,023	8,401	419,107	13,300	508,502
1978	2,682	41,574	55,578	224,715	16,545	341,094
1979	2,720	66,373	31,454	648,212	35,507	784,266
1980	580	107,422	16,666	45,666	26,277	196,611
1981	1,565	182,001	22,614	437,573	34,296	678,049
1982	1,671	193,712	45,244	25,993	18,859	285,479
1983	567	48,842	62,442	208,290	20,144	340,285
1984	895	91,664	48,244	343,633	70,554	554,990
1985	1,697	265,033	97,559	585,134	70,150	1,019,573
1986	1,705	145,714	205,598	308,942	82,621	744,580
1987	853	136,437	37,151	243,710	43,020	461,171
1988	2,893	92,532	14,419	69,559	69,675	249,078
1989	1,544	192,734	92,386	1,101,194	67,351	1,455,209
1990	2,107	185,805	164,211	319,186	73,232	744,541
1991	2,066	143,112	197,803	132,739	123,730	599,450
1992	1,355	203,104	298,740	94,209	140,834	738,242
Average 1960 to 1992						
	1,500	96,111	64,172	287,733	49,783	499,297
Preliminary 1993						
	992	205,955	231,038	537,954	134,601	1,110,540

Table 13. Southeast Alaska annual Stikine River (District 8) commercial drift gillnet salmon catches, in numbers, by species, 1960 to 1993.

Year	Chinook	Sockeye	Coho	Pink	Chum	Total
1960	0	0	0	0	0	0
1961	0	0	0	0	0	0
1962	618	4,430	3,921	2,889	2,035	13,893
1963	1,431	9,979	11,612	10,198	11,024	44,244
1964	2,911	20,299	29,388	114,555	10,771	177,924
1965	3,106	21,419	8,301	4,729	2,480	40,035
1966	4,516	36,710	16,493	61,908	17,730	137,357
1967	6,372	29,226	6,747	4,713	5,955	53,013
1968	4,604	14,594	36,407	91,028	14,537	161,170
1969	5,021	19,209	5,790	11,877	2,311	44,208
1970	3,207	15,120	18,403	20,523	12,305	69,558
1971	3,717	18,143	14,876	21,806	4,665	63,207
1972	9,332	51,734	38,520	17,153	17,363	134,102
1973	9,254	21,387	5,837	6,585	6,680	49,743
1974	8,199	2,428	16,021	4,188	2,107	32,943
1975	1,534	0	0	0	1	1,535
1976	1,123	18	6,056	722	124	8,043
1977	1,443	48,374	14,405	16,253	4,233	84,708
1978	531	56	32,650	1,157	1,001	35,395
1979	91	2,158	234	13,478	1,064	17,025
1980	631	14,053	2,946	7,224	6,910	31,764
1981	283	8,833	1,403	1,466	3,594	15,579
1982	1,033	6,911	19,971	16,988	741	45,644
1983	47	178	15,369	4,171	675	20,440
1984	14	1,290	5,141	4,960	1,892	13,297
1985	20	1,066	5,132	5,329	2,006	13,553
1986	106	4,187	14,324	4,968	5,943	29,528
1987	201	1,620	1,015	3,331	949	7,116
1988	776	1,246	12	145	3,129	5,308
1989	310	10,083	4,261	27,640	3,375	45,669
1990	557	11,574	8,218	13,822	9,382	43,553
1991	1,504	22,275	15,864	10,935	11,402	61,980
1992	967	52,717	22,127	66,451	15,451	157,713
Average 1962 to 1992						
	2,370	14,559	12,305	18,426	5,866	53,524
Preliminary 1993						
	1,628	76,874	14,307	39,661	22,504	154,974

Table 14. Southeast Alaska annual Taku/Snettisham (District 11) commercial drift gillnet salmon catches, in numbers, by species, 1960 to 1993.

Year	Chinook	Sockeye	Coho	Pink	Chum	Total
1960	8,810	42,819	22,374	33,155	41,852	149,010
1961	7,434	45,981	15,486	41,455	24,433	134,789
1962	5,931	36,745	15,661	17,280	20,635	96,252
1963	2,652	24,119	10,855	21,692	20,114	79,432
1964	2,509	34,140	29,315	26,593	12,853	105,410
1965	4,170	27,569	32,667	2,768	11,533	78,707
1966	4,829	33,925	26,065	23,833	35,133	123,785
1967	5,417	17,735	40,391	12,372	22,834	98,749
1968	4,904	19,501	39,103	67,365	21,890	152,763
1969	6,986	41,169	10,802	73,927	15,049	147,933
1970	3,357	50,922	44,960	197,017	110,390	406,646
1971	6,958	66,181	41,830	31,484	91,145	237,598
1972	10,955	80,404	49,780	144,339	147,957	433,435
1973	9,799	85,317	35,453	58,186	109,245	298,000
1974	2,908	38,670	38,667	57,731	86,687	224,663
1975	2,182	32,513	1,185	9,567	2,678	48,125
1976	1,757	61,749	41,729	14,962	81,803	202,000
1977	1,068	70,097	54,917	88,578	61,102	275,762
1978	1,926	55,398	31,944	51,385	36,254	176,907
1979	3,701	122,148	16,194	152,836	61,197	356,076
1980	2,251	123,451	41,677	296,572	192,647	656,598
1981	1,721	49,942	26,711	254,856	76,438	409,668
1982	3,057	83,625	29,072	109,297	37,608	262,659
1983	888	31,821	21,455	66,239	15,264	135,667
1984	1,773	77,233	33,836	145,971	86,741	345,554
1985	2,636	88,077	55,597	311,248	106,720	564,278
1986	2,584	73,061	30,512	16,568	58,792	181,517
1987	2,076	75,212	35,219	363,439	121,660	597,606
1988	1,779	38,923	44,881	157,831	139,578	382,992
1989	1,811	74,019	51,812	180,597	36,977	345,216
1990	3,480	126,884	67,530	153,036	145,799	496,729
1991	3,217	109,877	126,436	74,183	161,175	474,888
1992	2,341	135,411	172,662	314,445	112,527	737,386
Average 1960 to 1992						
	3,875	62,868	40,508	108,206	69,900	285,358
Preliminary 1993						
	6,721	171,453	64,138	17,103	166,388	425,803

Table 15. Southeast Alaska annual Lynn Canal (District 15) commercial drift gillnet salmon catches, in numbers, by species, 1960 to 1993.

Year	Chinook	Sockeye	Coho	Pink	Chum	Total
1960	1,453	59,604	10,964	1,760	58,562	132,343
1961	683	67,860	18,256	25,503	127,350	239,652
1962	806	103,696	24,436	2,041	115,036	246,015
1963	276	57,518	35,096	13,689	102,368	208,947
1964	771	68,200	33,347	6,602	103,047	211,967
1965	1,735	89,046	39,081	4,222	206,562	340,646
1966	868	108,087	40,794	6,008	235,172	390,929
1967	1,171	66,621	66,109	14,677	165,874	314,452
1968	1,489	80,004	43,262	7,803	169,615	302,173
1969	1,618	127,869	35,027	8,996	160,667	334,177
1970	1,771	79,115	48,643	19,839	271,415	420,783
1971	2,929	75,147	49,182	6,156	271,160	404,574
1972	986	81,010	57,971	14,520	349,681	504,168
1973	2,479	193,701	26,153	14,551	279,331	516,215
1974	1,671	152,015	64,881	5,003	445,361	668,931
1975	816	18,338	57,543	3,255	238,782	318,734
1976	2,142	127,089	71,984	4,429	375,033	580,677
1977	1,214	160,079	91,426	130,860	201,634	585,213
1978	536	108,480	53,165	3,811	118,428	284,420
1979	3,572	192,974	27,015	28,763	242,832	495,156
1980	440	53,987	28,898	82,343	168,853	334,521
1981	1,300	93,195	44,650	137,270	117,375	393,790
1982	5,945	273,882	72,370	69,050	306,644	727,891
1983	2,119	369,830	69,510	157,546	341,145	940,150
1984	6,099	334,582	68,215	78,000	642,238	1,129,134
1985	3,260	303,241	98,290	239,080	698,810	1,342,681
1986	2,772	289,905	82,121	38,115	381,382	794,295
1987	3,223	415,881	53,630	165,748	392,938	1,031,420
1988	1,257	351,876	81,537	208,423	377,768	1,020,861
1989	1,989	471,934	50,307	110,436	123,671	758,337
1990	670	357,418	63,070	101,035	210,532	732,725
1991	745	307,811	128,365	5,472	210,189	652,582
1992	610	286,035	108,753	351,562	245,247	992,207
<hr/>						
Average 1960 to 1992	1,800	179,577	55,880	62,623	256,203	556,084
<hr/>						
Preliminary 1993	741	172,990	59,103	11,336	306,248	550,418

Table 16. Southeast Alaska region private hatchery cost recovery catches in numbers, by species, 1975 to 1993.

Year	Chinook	Jacks	Sockeye	Coho	Pink	Chum	Total
1975	0	0	0	2,700	0	0	2,700
1976	0	0	0	0	0	0	0
1977	0	0	0	0	92,459	0	92,459
1978	0	0	0	0	0	0	0
1979	0	0	0	5,893	29,555	0	35,448
1980	0	0	0	0	0	0	0
1981	0	0	1	5,003	132,744	1	137,749
1982	0	0	1	12,150	7,346	773	20,270
1983	0	0	1	4,220	120,688	18,269	143,178
1984	937	0	7	26,836	171,356	453,204	652,340
1985	2,658	0	18	33,145	470,949	130,363	637,133
1986	1,093	0	6	72,810	47,461	157,155	278,525
1987	2,371	5	1,121	50,455	994,190	594,436	1,642,578
1988	9,642	1	90	7,631	115,761	514,054	647,179
1989	19,602	102	724	19,162	247,752	193,428	480,770
1990	26,340	298	75	125,762	923,643	376,499	1,452,617
1991	28,136	0	1,459	285,872	1,112,852	373,764	1,802,083
1992	16,945	28	2,108	270,233	2,189,891	695,451	3,174,656
Average 1975 to 1992							
	5,985	24	312	51,215	369,814	194,855	622,205
Preliminary 1993							
	22,123	0	7,545	34,140	293,600	1,054,398	1,411,806

Table 17. Southeast Alaska private hatchery cost recovery salmon catches, by species, 1993.

Area	Chinook	Sockeye	Coho	Pink	Chum	Total
Beaver Falls	3	2,206	25	188	79	2,501
Carroll Inlet	1,727	0	0	47	274	2,048
Neets Bay	6,888	4,725	3,297	147	510,159	525,216
Klawock	0	0	812	0	0	812
Kake	0	0	0	1,108	8,066	9,174
Keku Island	0	0	123	4,705	16,772	21,600
Paterson Bay	0	6	14,983	575	321	15,885
Port Armstrong	1,052	194	1,469	243,960	103	246,778
Gastineau Channel	351	0	4,829	11,973	1,300	18,453
Sheep Creek	23	44	0	0	124	191
Hidden Falls	727	370	8,186	30,897	206,503	246,683
Bear Cove	11,336	0	0	0	75,040	86,376
Deep Inlet	16	0	416	0	235,657	236,089
Total	22,123	7,545	34,140	293,600	1,054,398	1,411,806

Table 18. Canadian commercial and food fisheries salmon catches in the Stikine River, 1972 to 1993.

Year	Chinook	Sockeye	Coho	Pink	Chum	Total
1972	0	230	0	0	0	230
1973	200	3,670	0	0	0	3,870
1974	0	3,500	0	0	0	3,500
1975	1,202	2,252	50	0	0	3,504
1976	1,160	3,644	13	0	0	4,817
1977	162	6,310	0	0	0	6,472
1978	500	5,000	0	0	0	5,500
1979	1,625	13,534	10,720	1,994	424	28,297
1980	2,231	20,919	6,669	756	771	31,346
1981	1,558	27,624	2,675	3,857	1,128	36,842
1982	2,387	20,540	15,944	1,842	722	41,435
1983	2,063	21,120	6,173	1,120	304	30,780
1984	702	5,327	1	62	0	6,092
1985	1,296	25,464	2,175	2,356	536	31,827
1986	2,911	17,434	2,280	107	307	23,039
1987	2,645	9,615	5,731	646	459	19,096
1988	2,814	15,291	2,117	418	733	21,373
1989	2,958	20,032	6,098	825	674	30,587
1990	3,209	18,024	4,037	496	499	26,265
1991	2,171	22,763	2,648	394	208	28,184
1992	2,066	26,281	1,855	122	231	30,555
Average 1972 - 1992						
	1,612	13,742	3,295	714	333	19,696
Average 1979 - 1992						
	2,188	18,855	4,937	1,071	500	27,551
Preliminary 1993*						
	2,111	48,946	2,616	29	391	54,093

* 1993 catch includes 1,743 sockeye salmon taken in a terminal fishery at Tahltan Lake according to stipulations of an "Excess Salmon to Spawning Requirements License" issued by the Canadian Department of Fisheries and Oceans.

Table 19. Canadian commercial and food fisheries salmon catches in the Taku River, 1979 to 1993.

Year	Chinook	Sockeye	Coho	Pink	Chum	Total
1979	97	13,578	6,006	13,661	15,474	48,816
1980	225	22,602	6,405	26,821	18,516	74,569
1981	159	10,922	3,607	10,771	5,591	31,050
1982	54	3,144	51	202	3	3,454
1983	556	17,056	8,390	1,874	1,760	29,636
1984	515	27,242	5,357	6,964	2,492	42,570
1985	350	14,244	1,770	3,373	136	19,873
1986	352	14,739	1,783	58	110	17,042
1987	233	13,554	5,599	6,250	2,270	27,906
1988	741	12,259	3,221	1,030	733	17,984
1989	1,034	18,598	3,022	695	42	23,391
1990	1,386	21,189	3,281	378	12	26,246
1991	1,609	25,217	3,435	296	2	30,559
1992	1,675	29,722	4,264	0	7	35,668
Average 1979 - 1992	642	17,433	4,014	5,170	3,368	30,626
Preliminary 1993	1,805	33,247	3,033	16	7	38,093

Table 20. Southeast alaska region annual commercial trap salmon catches in numbers, by species, 1960 to 1993.

Year	Chinook	Sockeye	Coho	Pink	Chum	Total
1960	0	1,753	2,387	45,409	3,796	53,345
1961	0	9,949	5,740	157,046	8,648	181,383
1962	0	7,489	3,975	579,917	6,911	598,292
1963	0	4,166	1,646	86,836	2,204	94,852
1964	0	11,029	6,796	351,493	11,597	380,915
1965	0	3,345	2,256	33,626	246	39,473
1966	0	44,815	15,975	576,020	7,065	643,875
1967	0	3,144	368	6,925	321	10,758
1968	122	3,972	1,663	242,024	3,184	250,965
1969	0	970	400	29,238	258	30,866
1970	0	2,926	2,499	101,883	1,387	108,695
1971	0	0	0	0	0	0
1972	135	8,139	4,688	415,242	4,518	432,722
1973	25	1,118	324	41,692	226	43,385
1974	15	2,615	1,006	109,053	375	113,064
1975	3	621	562	108,217	1,108	110,511
1976	45	5,010	1,223	435,801	2,838	444,917
1977	51	14,309	1,374	293,504	2,617	311,855
1978	135	6,071	4,371	702,157	1,344	714,078
1979	250	15,478	3,684	189,580	1,260	210,252
1980	139	6,098	1,789	449,292	1,013	458,331
1981	86	10,618	1,647	194,206	1,199	207,756
1982	553	24,412	4,576	517,637	913	548,091
1983	194	4,545	6,270	802,700	1,776	815,485
1984	182	16,474	5,595	649,458	6,284	677,993
1985	366	10,903	3,540	522,679	1,563	539,051
1986	0	3,068	1,410	458,860	1,788	465,126
1987	0	6,099	754	85,041	1,333	93,227
1988	94	2,051	87	34,312	383	36,927
1989	328	2,730	477	496,262	482	500,279
1990	443	7,914	1,288	452,225	798	462,668
1991	70	709	318	93,935	303	95,335
1992	36	1,258	142	67,951	520	69,907
Average 1960 to 1992						
	99	7,388	2,692	282,734	2,371	295,284
Preliminary 1993						
	36	4,202	610	329,476	1,313	335,637

Table 21. Annette Island annual commercial drift gillnet salmon catch in numbers, by species, 1977 to 1993.

Year	Chinook	Sockeye	Coho	Pink	Chum	Total
1977	22	12,059	768	75,739	8,926	97,514
1978	36	15,507	2,187	33,612	16,362	67,704
1979	89	15,556	1,726	52,604	11,666	81,641
1980	38	15,775	2,565	191,814	38,779	248,971
1981	211	25,594	5,092	214,052	24,366	269,315
1982	569	42,847	6,665	162,049	27,281	239,411
1983	170	21,994	7,887	212,944	17,444	260,439
1984	39	23,707	8,240	404,360	71,610	507,956
1985	292	50,891	23,227	406,497	75,678	556,585
1986	98	27,939	52,834	512,504	96,755	690,130
1987	527	47,469	24,033	223,337	86,782	382,148
1988	579	26,555	7,138	364,426	115,380	514,078
1989	369	33,194	21,266	823,081	52,717	930,627
1990	524	43,979	26,764	615,560	75,372	762,199
1991	801	39,353	55,804	296,036	76,844	468,838
1992	455	56,494	54,289	548,384	90,027	749,649
<hr/>						
Average 1977 to 1992	301	31,182	18,780	321,062	55,374	426,700
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Preliminary 1993	268	76,054	13,362	456,244	54,003	599,931
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Table 22. Annette Island annual commercial purse seine salmon catch in numbers, by species, 1977 to 1993.

Year	Chinook ≥28" <=28"		Sockeye	Coho	Pink	Chum	Total
1963	0	0	28	42	1,309	78	1,457
1964	0	0	416	164	5,204	704	6,488
1965	0	0	14	24	257	2	297
1966	3	0	495	169	12,660	243	13,570
1967	0	0	26	6	24	2	58
1968	0	0	147	283	16,320	1,049	17,799
1969	0	0	0	0	0	0	0
1970	0	0	21	0	1,024	0	1,045
1971	0	0	0	0	0	0	0
1972	14	0	39	18	1,459	772	2,302
1973	0	0	0	0	0	0	0
1974	0	0	0	0	0	0	0
1975	0	0	1	8	183	198	390
1976	0	0	12	131	620	972	1,735
1977	1	0	1,430	9,984	205,834	3,665	220,914
1978	26	0	2,041	2,113	499,675	7,899	511,754
1979	0	0	311	239	66,050	3,511	70,111
1980	3	0	1,861	909	464,336	17,272	484,381
1981	4	0	1,316	1,100	245,151	4,747	252,318
1982	18	0	2,430	3,104	422,196	12,635	440,383
1983	3	0	5,939	3,341	1,001,650	5,017	1,015,950
1984	15	0	9,559	11,288	502,465	27,055	550,382
1985	47	0	6,073	3,911	488,423	9,128	507,582
1986	19	0	5,046	20,309	851,282	13,938	890,594
1987	5	0	618	9,204	28,584	17,991	56,402
1988	1	4	2,373	1,431	491,507	11,503	506,819
1989	73	0	14,542	2,127	1,231,281	12,216	1,260,239
1990	34	0	7,732	6,863	478,392	8,349	501,370
1991	56	0	5,091	5,513	543,412	4,972	559,044
1992	315	0	3,417	16,736	338,375	11,727	370,570
Average 1963 to 1992							
	21	0	2,366	3,301	263,256	5,855	274,798
Preliminary 1993							
	30	0	14,807	2,356	735,899	7,767	760,859

Table 23. Southeast Alaska reported subsistence and personal use salmon harvest, by species, and number of permits issued, 1961 to 1993.

Year	Number of Permits	Chinook	Sockeye	Coho	Pink	Chum	Total
1961	554						14,826
1962	309						7,067
1963	696						6,514
1964	642						9,525
1965	665						10,303
1966	2,372						15,384
1967	632	6	7,238	489	482	4,059	12,274
1968	815	62	8,382	624	1,328	4,260	14,656
1969	774	9	6,305	70	1,771	3,180	11,335
1970	788	13	10,751	0	2,246	2,415	15,425
1971	1,067	0	9,598	0	3,648	6,123	19,369
1972	936	10	9,098	0	1,253	3,970	14,331
1973	1,031	6	7,584	63	2,675	6,799	17,127
1974	1,042	6	7,822	61	2,690	6,819	17,398
1975	944	0	9,454	96	11,428	5,277	26,255
1976	1,166	0	9,625	9	1,590	3,594	14,818
1977	888	0	6,484	68	1,963	3,007	11,522
1978	1,490	0	10,662	57	4,832	3,150	18,701
1979	1,611	0	17,078	60	5,585	4,001	26,724
1980	3,612	40	21,586	10	1,439	3,741	26,816
1981	2,751	1	20,268	129	6,065	4,512	30,975
1982	2,956	8	32,117	99	4,239	3,717	40,180
1983	2,763	38	15,877	211	1,859	2,559	20,544
1984	2,996	55	19,204	721	2,560	2,502	25,042
1985	3,013	19	20,031	360	2,136	2,926	25,472
1986	2,777	29	21,977	277	971	2,840	26,094
1987	2,678	34	25,430	117	1,491	3,881	30,953
1988	2,820	94	20,086	120	1,080	3,015	24,395
1989							
Subsistence	1,631	25	18,323	241	1,160	2,485	22,234
Personal Use	1,457	206	10,492	312	2,912	361	14,283
Total 1989	3,088	231	28,815	553	4,072	2,846	36,517
1990							
Subsistence	1,811	69	21,570	396	2,290	2,737	27,062
Personal Use	1,327	94	12,010	420	1,125	617	14,266
Total 1990	3,138	163	33,580	816	3,415	3,354	41,328
1991							
Subsistence	2,704	118	33,096	366	1,408	2,175	37,163
Personal Use	742	83	4,485	272	413	1,080	6,333
Total 1991	3,446	201	37,581	638	1,821	3,255	43,496
1992							
Subsistence	521	23	20,577	496	1,478	2,023	24,597
Personal Use	497	24	3,873	604	217	44	4,762
Combined	1,285	18	22,751	111	1,206	985	25,071
Total 1992	2,303	65	47,201	1,211	2,901	3,052	54,430
Average 1961 - 1992							
	1,774						22,181
Average 1967 - 1992							
	1,982	42	17,840	264	2,905	3,802	24,853
Preliminary 1993							
Subsistence	695	39	12,306	191	137	701	13,374
Personal Use	611	13	2,607	328	188	38	3,174
Combined	1,783	6	12,924	36	403	536	13,905
Total 1993	3,089	58	27,837	555	728	1,275	30,453

Table 24. Yakutat Area reported subsistence and personal use salmon harvest, by species, and number of permits issued, 1975 to 1993.

Year	Number of Permits	Chinook	Sockeye	Coho	Pink	Chum	Total
1975	18	27	510	40	0	0	577
1976	35	83	1,060	55	0	0	1,198
1977	45	92	1,242	781	0	0	2,115
1978	127	59	870	912	0	0	1,841
1979	73	238	525	720	0	0	1,483
1980	68	284	961	982	0	0	2,227
1981	88	167	952	1,701	0	0	2,820
1982	71	198	1,645	2,180	0	0	4,023
1983	N/A	188	1,175	360	0	0	1,723
1984	88	233	890	572	0	0	1,695
1985	46	230	1,003	59	0	0	1,292
1986	170	301	2,357	586	0	0	3,244
1987	120	372	3,598	883	0	0	4,853
1988	111	196	2,119	176	46	2	2,539
1989							
Subsistence	117	355	3,327	863	220	49	4,814
Personal Use	36	4	167	17	1	2	191
Total 1989	153	359	3,494	880	221	51	5,005
1990							
Subsistence	116	360	3,146	729	35	2	4,272
Personal Use	12	1	186	80	0	0	267
Total 1990	128	361	3,332	809	35	2	4,539
1991							
Subsistence	132	59	861	198	1	0	1,119
Personal Use	2	2	35	15	0	0	52
Total 1991	134	61	896	213	1	0	1,171
1992							
Subsistence	139	549	5,469	3,645	37	12	9,712
Personal Use	0	0	0	0	0	0	0
Total 1992	139	549	5,469	3,645	37	12	9,712
Average 1975 - 1992	90	222	1,783	864	19	4	2,892
Preliminary 1993							
Subsistence	130	34	561	99	6	0	700
Personal Use	0	2	18	0	0	0	20
Total 1993	130	36	579	99	6	0	720

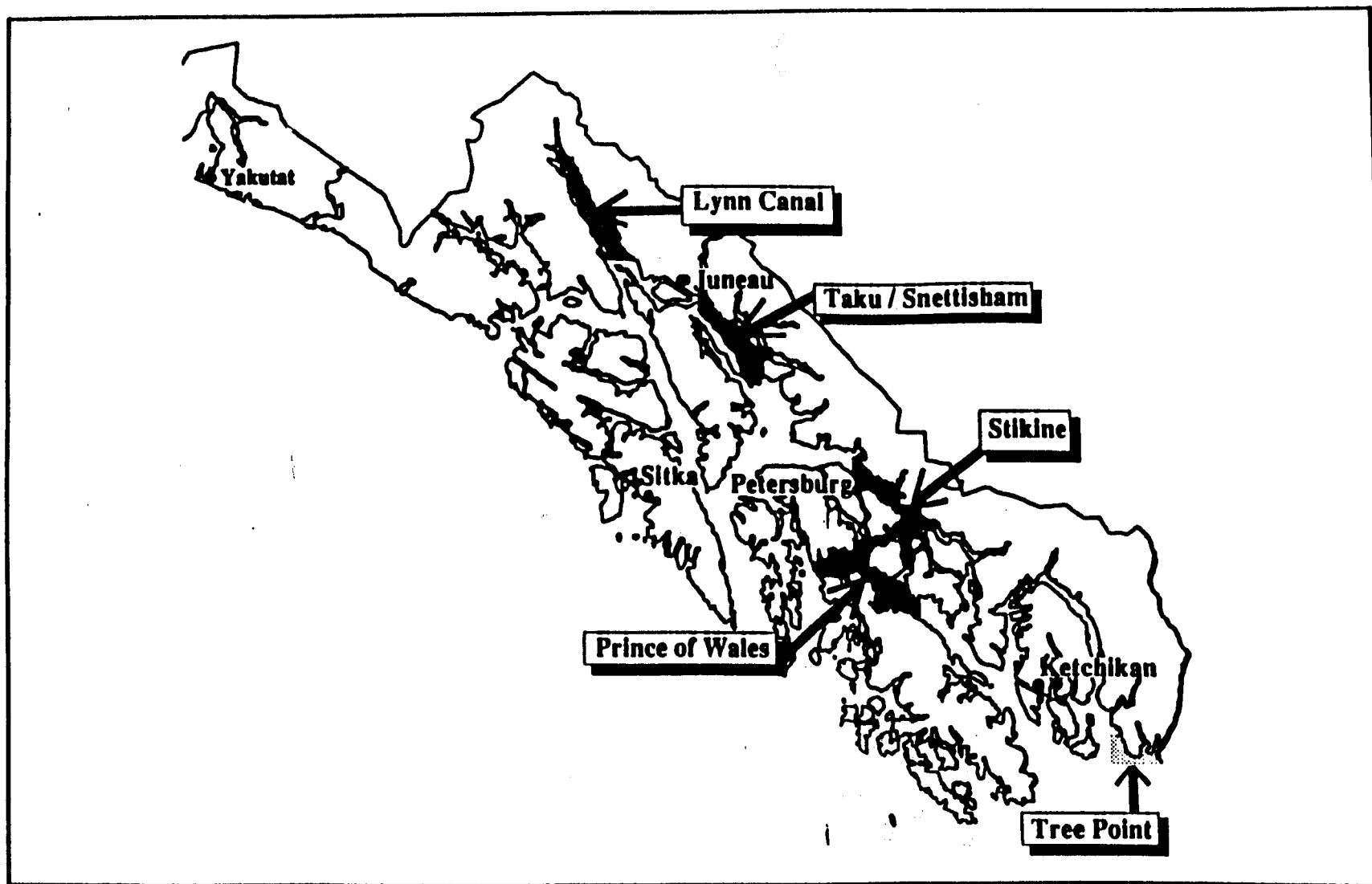


Figure 1. General drift gillnet fishing areas in Southeast Alaska.

REPORT TO THE BOARD OF FISHERIES
SOUTHEAST ALASKA-YAKUTAT SALMON TROLL FISHERIES, 1993



By

David M. Gaudet

Alaska Department of Fish and Game
Commercial Fisheries Management and Development Division
Juneau, Alaska

December 1993

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ABSTRACT

A total of 4,071,968¹ salmon of all species were caught in the 1993 Southeast Alaska troll fishery. The catch included 226,345 chinook, 2,391,430 coho, 902,704 pink, 525,847 chum and 25,642 sockeye salmon, landed by 839 power troll and 599 hand troll permits. Of this, 477,569 salmon (11.7%) were taken by hand troll gear and 3,594,399 salmon (88.3%) by power troll gear. The Alaskan chinook hatchery contribution to the troll fishery was 15,117 (6.7%). A total of 371,785 coho produced by Alaskan hatcheries were harvested by the troll fleet, which accounted for 15.7 % of the total troll coho salmon catch. Chinook escapements in Southeast Alaska were the highest on record. Escapements to the Stikine and Taku Rivers remained strong. Coho escapements were generally strong and well distributed.

¹ Catches are preliminary through October 1993.

INTRODUCTION

This report describes the fishery management actions by the Alaska Department of Fish and Game (ADF&G) and reports preliminary salmon catches by the troll fleet for the 1993 Southeast Alaska troll season. Data on stock status, escapement, and hatchery contribution of species important to the troll fishery are presented along with a discussion of current fishery management problems.

DESCRIPTION OF THE TROLL FISHERY

The commercial troll fishery in Southeast Alaska and Yakutat (Region 1) occurs in State of Alaska waters and in the Federal Exclusive Economic Zone (EEZ) east of the longitude of Cape Suckling (Figure 1). The EEZ waters are those more than three miles west of the surf line (5AAC 39.975)(A). All other waters of Alaska are closed to commercial trolling.

The commercial troll fishery harvests primarily chinook and coho salmon. Other species of salmon harvested by trollers are considered incidental, although targeting of pink and chum salmon has increased in recent years. Historically, the troll fishery harvested about 90% of the chinook salmon. Since 1980, the percentage of the total chinook harvest taken by the troll fishery has dropped and is now limited by allocation. Historically, the troll fleet harvested 50-75% of the coho salmon taken in Southeast Alaska commercial fisheries. Since 1989, the troll fleet has been managed so as to harvest 61% of the commercial coho salmon on average. Pink and Chum salmon were targeted primarily in the Cross Sound experimental fishery and chum salmon were targeted in the approach to Deep Inlet release site in Sitka Sound. The troll fleet also harvests halibut, lingcod and rockfish; harvest of these non-salmon species is limited by time, area and size restrictions.

Commercial trolling for chinook salmon occurs during two seasons; winter (October 1 through April 14) and summer (April 15 to September 30). The winter troll fishery occurs primarily in inside waters. The summer season is divided into four fisheries: 1) experimental fishery; 2) hatchery access fishery; 3) terminal fishery; and 4) general summer fishery. The first three are designed to maximize the catch of Alaska-origin hatchery chinook. A quota on the number of non-Alaskan hatchery chinook salmon is set yearly under the U.S./Canada Pacific Salmon Treaty (PST). Time and area openings are set by the Alaska Board of Fisheries (Board). The season for coho salmon is from June 15 through September 20. There are no seasonal restrictions for other species of salmon.

The commercial troll fleet is comprised of two types of gear, hand troll and power troll. Vessels using hand troll gear are limited to two lines on hand-operated gurdies or four sport fishing poles. Although more permits are available compared with power troll gear, hand trollers take a smaller portion of the catch. Vessels using power troll gear are generally larger than those using hand troll gear and are limited

to four lines on power operated gurdies except within the EEZ north of the latitude of Cape Spencer where six lines may be used.

STOCK DESCRIPTION AND STATUS

Only the status of chinook and coho salmon stocks are discussed in this report.

Chinook Salmon Stocks

Native chinook salmon stocks occur throughout Southeast Alaska and Yakutat. Chinook salmon stocks occur primarily in the large mainland rivers and their tributaries. The most important are the Alsek, Taku, Stikine, Chilkat and the Behm Canal Rivers including the Unuk, Chickamin, Blossom and Keta Rivers. In total, 34 rivers in the region are known to produce runs of chinook salmon. The three major systems: the Alsek, Taku and Stikine rivers, are also "transboundary" rivers, originating in Canada and flowing to the sea through Alaska. Portions of the Unuk, Chickamin and Chilkat Rivers are also in Canada. Shared ownership and coordinated management of the transboundary stocks are addressed by the Pacific Salmon Commission (PSC) under the terms of the PST.

Southeast Alaska chinook salmon stocks are all "spring type" entering spawning streams during spring and early summer months. After emergence the following spring, the majority of fry remain in freshwater rearing areas for at least one year, migrating seaward the next spring. For most Southeast Alaska origin chinook, ocean residency may last 2, 3, or 4 years. Several age classes of mature spawners and immature chinook salmon are harvested by trollers during the fishing season.

Current information indicates that the majority of chinook salmon harvested in the Region 1 troll fishery are produced from spawning streams and hatcheries in the Pacific Northwest and Canada. This information is based on age structure analysis, coded wire tagging studies and general productivity considerations. Management of intermingling chinook salmon stocks is coordinated through the PSC.

Historical Catches of Chinook Salmon

Chinook salmon catches in Southeast Alaska are currently lower than historical levels (Figure 2). Annual commercial all-gear catches during the past ten years have averaged about 263,000 chinook salmon. This has been primarily due to a harvest ceiling imposed by the North Pacific Fishery Management Council (NPFMC) through 1985, and the Board and the PST since then. This is considerably lower than harvest levels between 1920 and 1950 when catches averaged 540,000 fish. The harvest ceiling was implemented

both as part of a 15-year rebuilding program for Southeast Alaska chinook stocks, and as part of coastwide conservation actions taken for depressed non-Alaskan chinook stocks which contribute to the Southeast Alaska fisheries. The decline in abundance was primarily the result of (1) depressed natural chinook stocks in both Southeast Alaska and coastwide due to over-fishing, and (2) loss of freshwater spawning and rearing habitat, particularly in the Pacific Northwest where construction of dams on the Columbia River has drastically reduced salmon production.

Abundance of chinook stocks in the Southeast Alaska fisheries has in general increased since the rebuilding program began in 1981.

Coho Salmon Stocks

Coho salmon occur in more than 2,000 streams in Southeast Alaska. Most coho streams are small, with the number of spawners typically ranging from several up to 1,000. Because of the number of these systems they collectively contribute a substantial portion of the production. Lake systems are also important and typically produce returns between 1,000 and 8,000. Large populations occur in the Taku, Chilkat, Berners, Stikine, Unuk, and Chickamin Rivers and in most Yakutat systems. Spawning takes place during the fall and early winter months. Most coho salmon rear in freshwater for two years, and virtually all spend no more than one winter in the ocean before returning. The majority are 4-year-old fish and are caught in the year of spawning. Coho harvested by trollers are primarily of Alaska origin.

Historical Catches of Coho Salmon

The highest average decade all-gear catch of coho salmon occurred during the 1940's (Figure 3). A decline in average catch occurred during the next three decades, with a low decade average of 1,000,000 in the 1970's. During the 1980's, the average all-gear commercial coho salmon catch was 1,900,000. This nearly equaled the decade high of 2,000,000 yearly average of the 1940's. Since 1990 the average coho catch has exceeded 3,000,000 fish. This increase is thought to be primarily the result of the unusually mild winters experienced in recent years, and better spawning escapement levels realized since more conservative management was implemented beginning in 1980. Other probable contributing factors include more intensive fishing in highly mixed stock areas, increased targeting during chinook non-retention periods, and contributions from hatchery production.

SUMMARY OF 1993 SEASON

A total of 4,071,968 salmon of all species were harvested by the troll fleet (Table 1). Of this, 477,569 were taken by hand troll gear (Table 2), and 3,594,399 were taken by power troll gear (Table 3). This was the highest total catch since statehood, due to record catches of coho, chum and sockeye. The only other year to exceed 3,000,000 fish catch was 1989.

Fishing Effort

The Alaska Commercial Fisheries Entry Commission (CFEC) currently issues 958 power troll permits and 1,746 hand troll permits. In 1993, preliminary estimates indicate that 839 power troll gear units and 599 hand troll gear units were actually fished (Table 4). Hand troll gear permit holders accounted for about 10.6% of the 1993 chinook troll catch and about 13.2% of the coho troll catch.

The number of power troll permits fished annually since limited entry was introduced in 1975 has increased slowly. However, hand troll permits increased from approximately 1,100 actively fished permits in 1975 to a high of 2,624 in 1978. Limited entry was introduced in 1980 and since then the number of actively fished permits has declined. The large number of hand troll permits fished during the late 1970's was thought to be partly the result of persons participating in the fishery to allow them to qualify for permits when the hand troll fishery was eventually placed under limited entry. Of the 2,150 hand troll permits, about 1,300 of them are non-transferable and cannot be replaced when their holders leave the fishery.

Chinook Salmon Fishery

The 1993 troll chinook fishery was managed to (1) comply with provisions of the PST regarding chinook catch ceilings and minimization of incidental mortalities, (2) continue the Southeast Alaska natural chinook rebuilding program, (3) harvest a total of 201,690 Treaty chinook salmon, and (4) provide maximum harvest of Alaska hatchery-produced chinook salmon. However, in 1993 additional actions were required to comply with conditions issued by the National Marine Fisheries Service for the threatened Snake River Fall Chinook salmon. Under the Endangered Species Act of 1973, no taking, no matter how small, of a threatened species is allowed without an Incidental Take Permit issued by NMFS.

The chinook Annex of the PST expired following the 1992 season and the PST negotiations ended without an agreement for chinook salmon for 1993. At this time, the NMFS North West Region (NMFS) entered into consultation with the North Pacific Fishery Management Council (NPFMC) over management of Southeast Alaska chinook salmon fisheries, specifically to reduce impact on the Snake River Fall Chinook. During the consultation process, the state worked closely with the NMFS to develop options for

management of the fishery. The department also held meetings throughout Southeast to discuss the situation with the public and to develop input on management of the fishery. Following the consultation, the NMFS issued a Biological Opinion that required additional management actions in the 1993 fishery. These actions constituted the Incidental Take Permit.

Consequently, the 1993 chinook salmon troll fishery was managed for a ceiling of 263,000 fish. In addition, although no annex was formally signed, the fishery was managed to comply with previous PST protocol as follows: the base catch was calculated by subtracting the "add-on" (Alaskan hatchery produced chinook minus pre-Treaty production and a risk factor), and (2) a management range of $\pm 7.5\%$ for accumulation of overages and underages beginning in 1987. The NMFS Biological Opinion required that the troll fishery reduce the exploitation on the Snake River Fall Chinook Salmon by 5% from the 1986 to 1990 base period average. The department chose to achieve this reduction by decreasing incidental mortality rather than a reduction in the catch. To accomplish this, the spring fisheries, normally limited to 35,000 Treaty fish were modified. The hatchery access fishery was eliminated and 25,000 Treaty fish transferred to the general summer fishery. This would reduce the number of chinook non-retention (CNR) days. The department managed the experimental fisheries during this period so that they would not exceed 10,000 Treaty fish. In addition, the general troll fishery was closed for five days following the initial opening.

In 1993, the all-gear catch (cost recovery not included) was approximately 304,000 chinook salmon. The commercial catch was 254,281 (83.7%), and there was a recreational harvest of 49,608 (16.3%) (Table 5). A hatchery harvest of 39,369 was calculated (32,619 add-on). The total commercial harvest of chinook salmon included a troll harvest of 226,119, a purse seine harvest of 8,626 chinook greater than 5 lbs and 2,553 less than 5 lbs, a drift gillnet harvest of 17,892, and a set gillnet harvest of 1,310. The drift gillnet harvest included 6,571 in terminal areas, of which 6,400 were caught in Earl West Cove. An additional 334 chinook salmon were harvested in Annette Island net and trap fisheries and 22,123 were harvested in hatchery cost recovery fisheries, primarily in Neets and Silver Bays. Comparative all-gear commercial and recreational chinook salmon catches since 1965 are shown in Table 6.

Since implementation of the PST, troll chinook catches had remained relatively stable until 1990 when an additional quota increase of 39,000 chinook salmon over previous years, along with a record Alaska hatchery add-on, combined to produce a harvest of 287,427 (Figure 4). In 1992, the fishery was required to make up a cumulative overage. The 1992 chinook salmon harvest was thus the lowest ever by the troll fishery.

Winter Season

The 1993 winter troll season began October 11, 1992 and continued through April 14, 1993. The beginning date was delayed 10 days from the usual October 1, the first change in the dates of the winter season since 1981. The open area during the 1992-1993 winter season was restricted to those areas of Southeast Alaska lying inside (east of) the surfline (except in Sitka Sound where the line was modified

to follow LORAN lines), portions of District 16 north of Cape Spencer, and the waters of Yakutat Bay. All outer coastal areas, including the EEZ, were closed during the winter fishery.

Approximately 62,720 (28%) of the 1993 troll chinook catch was harvested during the 1992-1993 winter season (Table 7, Figure 5). This was the second largest winter catch on record. The winter troll catch is included in the all-gear catch ceiling; however, no specific catch limit exists for the winter fishery.

Experimental Fisheries

In 1993, experimental troll fisheries were conducted a minimum of two days per week during late May and June in twelve near-terminal hatchery areas. The purpose of all, except the Cross Sound fishery, was to increase the take of Alaska-origin hatchery chinook. These areas were adjacent to the Little Port Walter (National Marine Fisheries Service, NMFS), Whitman Lake Hatchery and Carroll Inlet release site (Southern Southeast Regional Aquaculture Association, SSRAA), Crystal Lake Hatchery (ADF&G) and Medvejie (Northern Southeast Aquaculture Association, NSRAA). In addition, approach areas in Sumner Strait, Clarence Strait, Stikine Strait and Frederick Sound were open. The open area in Frederick Sound was expected to provide for an additional harvest of Crystal Lake Hatchery chinook salmon, while the areas in Clarence and Sumner Straits were expected to provide additional catch, primarily from the various SSRAA releases. The area in Stikine Strait provided access to fish returning to Earl West Cove in Eastern Channel. Time was increased in areas that have high Alaska hatchery catch percentages.

Between 100-300 boats participated each week in the 1993 experimental fisheries and they harvested 15,831 chinook salmon, of which 38.5% were of Alaskan hatchery origin (Table 8). The highest catches were in the Silver Bay area, followed by Frederick Sound. Catches were highest in Statistical Week 26 followed by week 25. Approximately 224 chinook salmon were harvested in an experimental troll fishery designed to catch pink and chum salmon in the Cross Sound area (District 114).

Terminal Fisheries

The Carroll Inlet terminal fishery opened from May 18 - June 30 and harvested a total of 377 chinook salmon. The Wrangell Narrows terminal fishery opened from June 1 - June 30 and harvested 2,459 chinook salmon (Table 8). The Earl West Cove terminal fishery opened June 15 though there was very little troll effort.

Hatchery Access Fisheries

The hatchery access fishery was canceled to comply with the Incidental Take Permit for Snake River Fall chinook salmon.

General Summer Season

The general summer season troll harvest target was determined by subtracting the base catches in the winter and June troll fisheries. Five percent of this total was added for the expected Alaska hatchery contribution.

Opening of the 1993 general summer trolling season was again delayed until July 1. This reduced the duration of the chinook salmon non-retention fishery which occurs after the allowable chinook salmon catch has been taken.

Since 1984 the catch and Alaskan hatchery add-on have been monitored inseason by the department's fisheries performance data program (FPD). This consists of confidential interviews with trollers to obtain detailed catch per unit effort (CPUE) data and an inspection of troll catches for coded wire tags (CWT). Total catch is estimated by combining vessel counts obtained during weekly overflights with the CPUE obtained from the interviews. CWTs are shipped as soon as possible to the Tag Lab in Juneau and the data returned to management within two weeks of landing.

In 1993, because of the relatively low number of chinook salmon available under the quota (approx. 132,000) and an expected high abundance of chinook salmon, the troll fishery was opened for set period of six days. The opening was followed by a 5-day troll closure to comply with conditions of the ITP. The catch was 101,127 for the 6-day opening (16,800 per day) (Table 9). With over 32,000 fish left under the quota, another five days of chinook fishing were allowed from August 21-25 following the 8-day coho closure. The harvest in that opening was 24,865 chinook (5,000 per day). During the 5-day closure, the Carroll Inlet Terminal Area and Silver Bay and Cross Sound experimental areas remained open.

Based on preliminary catch data, about 11,000 chinook were thought to still be available for harvest by commercial trollers after the August 25 closure. Chinook fishing was resumed on September 12 and continued to the end of the season on September 20. Coho catches were continuing on a record pace and chinook catch rates were expected to be low in September. The preliminary estimate of harvest for that opening was 18,645 chinook (2,100 per day) (Figure 6).

Chinook salmon non-retention was implemented for a total of 49 days in 1993: July 12 through August 12 (32 days), and August 26 through September 11 (17 days) (Table 10, Figure 7). Several areas were closed to all fishing during chinook non-retention periods to reduce hook and release mortality (Figure 8). No observer program was conducted in 1993 to document chinook salmon encounter rates or potential mortality.

Coho Salmon Fishery

General regulatory dates for the troll coho salmon season are June 15 through September 20. The major portion of the coho catch normally occurs from mid-July through early September. Troll coho catches

generally peak between late July and mid-August, while catches in inside gillnet fisheries peak approximately one month later in early to mid-September. Migrations into spawning streams generally peak in late September (Figure 9).

Southeast Alaska coho salmon fisheries are managed based on assessed inseason run strength, and are regulated to achieve conservation objectives and allocation policies established by the Board. Harvest ceilings such as those in the chinook fishery are not used.

Opening of the general coho season in 1993 was delayed to correspond to the opening of the chinook season on July 1. However, coho caught after June 14 in the experimental and terminal fisheries, could be retained. Historically, less than 5% of the troll coho salmon catch occurred between June 15 and July 1. Many of the fish which historically had been caught during this period are probably now caught in the experimental or hatchery access fisheries and in the general summer fishery. Following the chinook closure on July 6, trolling was closed for five days to comply with the Snake River Fall chinook ITP. Catches of coho by week are shown in Figure 10 and Table 11.

The 1993 coho salmon management plan provided for a 7-14 day closure in late July if an assessment of run strength indicated a total all-gear harvest of less than 1,120,000 (80% of the 1980 to 1988 average catch). The assessment, using fishery performance data collected by the department, indicated a projected a total commercial harvest of 3,550,000, thus an early conservation closure was not warranted.

During the 1970's, troll effort and coho catch increased in the outer coastal areas (Figure 11). In 1980, the Board specified an approximately 10-day closure during the coho season to maintain the historical allocation balance to inside fisheries. In addition, the closure allows coho to segregate into more distinct stock units to facilitate assessment of run strength. The 10-day closure has been implemented each year since 1980. During 1993, data throughout the season indicated that the troll fishery was much further ahead of the 1971-1980 base catch specified by the Board than were the gillnet fisheries. In addition, CPUE in the Juneau recreational fishery was also lower than the 1971-1980 base period. The 1993 return was projected to be very large, based on troll catches, as well as evenly distributed throughout all areas of Southeast. In addition, inseason data indicated that the run was composed primarily of wild fish. Based on the high abundance of wild fish, a closure of only eight days was implemented, beginning August 13. The preliminary estimate of the percentage of the total commercial coho salmon catch by the troll fleet was 67%.

The 1993 troll coho salmon harvest of 2,390,000 (preliminary) was the highest since the fishery began 100 years ago (Figure 12). The troll share of the commercial harvest beginning in 1989 has averaged 62.8%.

Other Species

Catches of sockeye, pink and chum salmon in the 1993 summer troll season were 25,642, 902,704, and 525,847, respectively. The catches of sockeye and chum were new record highs and the pink catch was the third highest since statehood. The huge increase in chum catch was primarily due to large returns to the NSRAA Medvejie Hatchery near Sitka. The troll harvest of chums in District 113 was over 455,000 fish. The Deep Inlet Terminal Fishery targeted chum salmon returning the NSRAA Medvejie Hatchery. Trollers harvested 20,339 chum salmon during periods when net gear was not fishing.

The experimental troll fishery in Cross Sound targets pink and chum salmon during the early part of the season, catches in 1993 totalled 143,549 pink, 11,666 chum, 3,181 sockeye and 13,609 coho salmon.

EEZ Catches

In 1993 approximately 5.9% (13,279) of the chinook catch and 8.7% (208,949) of the coho catch by the troll fishery was reported taken outside of State waters, in the Exclusive Economic Zone (EEZ). The EEZ is composed of Districts 150, 152, 154, 156, 157 and 189. In addition, 692 sockeye, 4,921 pink, and 5,343 chum salmon were taken in the EEZ.

ALASKA HATCHERY PRODUCTION

State, Federal and private hatcheries produce both chinook and coho salmon that are caught by the troll fleet. Hatchery-produced chinook salmon began appearing in significant numbers in troll catches in 1980 when an estimated 5,877 were harvested. Alaska hatchery contributions increased through 1991 when they contributed 38,689 chinook salmon to the troll catch, comprising 14.7% of the total (Figure 13). Since 1991, the Alaska hatchery contribution to the troll harvest has declined to 25,500 in 1992 and approximately 18,000 (7.9%) in 1993. Alaskan hatcheries contributed 3,852 (6.1%) chinook salmon to the 1992-1993 winter fishery (Table 12). A total of 6,100 (38.5% of the total) Alaskan hatchery-produced chinook salmon were caught in the 1993 experimental fishery. The hatchery access fishery was canceled in 1993 to comply with the ITP. In the general summer fishery, a total of 4,792 (3.3%) chinook salmon were contributed by Alaskan hatcheries.

Hatcheries contributed an estimated 391,723 coho salmon (16.4%) to the total troll catch in 1993 (Table 13, Figure 14). Alaska hatcheries produced 96.5% (378,172 fish) of the total hatchery coho salmon contribution. Hatchery-produced coho salmon were first documented in the troll catch in 1980. Total and proportional contributions increased annually until 1986 when 276,155 hatchery-produced coho salmon contributed 13.0% of the total troll coho salmon catch. Hatchery contribution declined during the 1987-

1989, but increased again to record highs in 1990, 1991 and 1992. The proportional contribution of hatchery stocks has been greatest when wild stocks were abundant and lowest when wild stocks were weak.

ESCAPEMENTS

Chinook Salmon Escapements

The estimated total escapement of age 1.3 and 1.4 chinook salmon for all Southeast Alaska and transboundary rivers in 1993 was a record high 102,000 fish (Table 14). This was 48% or 33,000 fish more than in 1992, and 20,000 fish above the escapement goal of 82,140. The 1993 escapement represented an increase of approximately 210% or 69,500 chinook salmon compared to the 1975-1980 base period average of 32,455, and an increase of 116% or 54,865 compared to the 1981-1985 average of 47,177 (Figure 15).

Escapements of chinook salmon increased from 1992 in every system except the Situk River which is managed in season to achieve an escapement goal. The 1993 total chinook escapement was greater than the goal for the first time since the start of the rebuilding program in 1981.

Total escapements of chinook salmon in Southeast Alaska have exhibited a strong trend towards rebuilding since 1984 due primarily to the Taku and Stikine Rivers. These two rivers make up 70% of the total Southeast Alaska escapement goal and made up 80% of the total 1993 escapement. The Stikine River escapement was 46,000, approximately 25,000 over the goal. In the other large river, the Alsek, the escapement remained below the goal.

In the medium sized rivers, only the Situk and Andrew Creek were above goal, all others were below. Escapements to the Behm Canal systems remained below goals despite small increases in escapement. The department is finalizing an evaluation of escapement goals for the Behm Canal systems and will be adopting new goals by January 1994.

Coho Salmon Escapements

Escapement Assessment

Only a very small percentage of the coho salmon escapements in Southeast Alaska are enumerated or surveyed because of the extremely scattered distribution of stocks and difficult conditions for observation of spawners during the fall months. In 1993, weirs were operated on only three streams, while surveys

were conducted on another 60 streams. An adult tagging program was used to estimate the escapement of coho salmon to the Taku River.

Variations in environmental conditions and run timing can cause serious problems in obtaining ground and aerial surveys that reflect actual spawner abundance. High water events appear to trigger spawning but also adversely affect stream visibility and, therefore, make it difficult or impossible to accurately count fish. Once spawning occurs, stream life is typically very short and post-spawners are quickly removed by predators or flushed downstream by high water. Survey counts are usually higher when fall weather is dry and fish continue to accumulate in streams before spawning occurs. Low peak counts are often associated with seasons when numerous protracted freshets occur in October that bring fish to the spawning areas and then flush out the post-spawners, while at the same time severely limiting survey opportunities. Improved precision can be obtained by conducting multiple surveys throughout the fall. This is feasible for some systems such as those for the Juneau roadside streams, but is more difficult and expensive for remote streams such as the major coho producing systems in southern Southeast Alaska.

Escapement

Fishery harvest and CPUE indicated that the 1993 coho salmon return was one of the largest on record and that abundance was again evenly distributed as it was in the past two years. Escapement data did not, in all cases, reflect abundance indicators in the fisheries, particularly in northern inside areas where gillnet fishery performance was only average while escapement was generally very strong.

Inriver runs and escapements in the Yakutat area were variable. The total setnet catch of 237,310 fish was one of the largest in history. However, the catch was concentrated in fewer systems than usual with the Situk-Ahrnklin catch of 136,910 accounting for the majority. Escapements in most systems were average or above, except for the Alsek and Old Itasca Rivers which were below average.

In the northern inside area, the escapement of 60,000 fish to the Taku River through September 11 was very strong. The Berners River in lower Lynn Canal produced a peak count of 15,700 spawners which was a record for the fourth consecutive year. Juneau roadside streams showed generally strong although mixed escapements. The Auke Creek Weir had the third largest escapement since it was installed in 1980.

Outside systems in northern Southeast showed very strong to exceptional returns. Ford Arm Lake on west Chichagof Island had a record escapement of 4,200 fish which was the second consecutive record and was 75% higher than the 10-year average. Sitka Sound streams also showed abundant escapement.

Escapement information from southern Southeast was more limited. However, surveys of 15 streams in the Ketchikan area indicated strong overall escapements that were comparable to 1991 and 1992. Despite an above average total run estimated at approximately 4,300, the escapement to Hugh Smith Lake was only 830 compared with a 1982-92 average of 1,265.

COHO SALMON HARVEST RATES

Coded-wire tagging studies conducted since the early 1980s have provided annual harvest rate estimates for four coho salmon stocks. These stocks include Auke Creek near Juneau, the Berners River in lower Lynn Canal, Ford Arm Lake on the outer coast north of Sitka, and Hugh Smith Lake on the mainland southeast of Ketchikan. Fish are tagged in these systems and their contribution to the fisheries is estimated through the department's catch sampling and coded wire tag processing programs. Weirs are operated on the three lake systems where escapements are enumerated and sampled for tags. The Berners River escapement is intensively surveyed and sampled. Escapement estimates for the Berners River are conservative since a lower river weir is not employed and, therefore, resulting harvest rate estimates are likely biased upward.

Harvest rate estimates by the troll fishery and all fisheries combined are available since 1982 (Table 15; Figures 16 and 17). Total harvest rate estimates for all four stocks for 12 years have averaged 60.1%. However, average harvest rate estimates for individual systems vary widely from 43% for Auke Creek to 73% for the Berners River. The average trend for the four stocks has been relatively stable. However, estimates for the Berners River decreased since 1988 coincident with reduced effort in the Lynn Canal drift gillnet fishery because of weaker chum salmon returns and late runs in the troll fishery during 1991-1993. Total exploitation of the Hugh Smith Lake stock in southern Southeast has increased from 52% to 66% in 1982-1988, to 68%-82% after 1988. A primary factor appears to be increased effort on coho salmon in southern Southeast Alaska which is partly a result of increased hatchery production.

Estimated harvest rates by the troll fishery alone have averaged 41% for all four stocks for the 12 years. Average estimates for individual systems ranged from 32% for Auke Creek to 54% for Ford Arm Lake. Average harvest rate estimates for the troll fishery have shown no significant trend during 1982-1993. The 1993 troll harvest rates were below average for the northern inside stocks, but above average for outer coastal and southern stocks.

CURRENT FISHERY MANAGEMENT PROBLEMS

The troll fishery has undergone many changes since 1979. Beginning in 1980, a closure was implemented to ensure the movement of coho salmon into inside areas for escapement and to ensure catch sharing for the inside fisheries. This was in response to increased effort in the troll fishery as more vessels moved to outer coastal and offshore areas during the 1970's. The shift in effort had resulted in more of the harvest occurring earlier in the season and it increased the amount of time which coho stocks were available to troll gear. It also resulted in decreased abundance to the inside fisheries. This closure has occurred each year since and, in all but 1993, has been for 10 days. The 1993 closure was for eight days due to the large abundance of wild fish.

Also in 1980, the general summer troll fishery was closed for the last 10 days in September for chinook salmon. Then in 1981, as a result of an intensive assessment of Southeast Alaska chinook escapements and production, a program to provide for conservation of these stocks was proposed. In 1981, the Board adopted a 15-year rebuilding program. This has resulted in spring closures of the troll fishery when the availability of mature Alaska spawning fish is high. These closures were complimented by accompanying reductions in the overall level of harvest. Catch ceilings were used so that savings made early in the season would not merely be offset by harvest of immature fish later in the season. Since 1981, the troll fishery has been closed from April 15 through May 14 with progressively longer delays until July 1 in 1988.

In addition to the 1981 Alaska chinook salmon rebuilding program, a rebuilding program for coastwide stocks began under the PST in 1985. As a result of both of these programs, the abundance of chinook salmon in Southeast Alaska waters has increased. This increase in abundance has resulted in some additional problems. First, as the abundance increased, the number of days required to harvest the troll fleet's portion of chinook salmon decreased. Another change has been the increased portion of the troll harvest taken in the winter fishery. The largest winter catches on record were taken in the 1992 and 1993 seasons. Increased winter catches result in decreased numbers of chinook fishing days in the general summer fishery. As a result of this decrease in days, the number of days during which chinook salmon cannot be retained has increased. This increases the incidental mortality, i.e., the number of fish that die from being hooked and released.

The length of the chinook salmon season impacts the troll harvest rate on coho salmon. When the number of chinook fishing days is short, the troll fleet targets primarily on coho salmon. Total harvest rate estimates for four coho indicator stocks for the past 9 years have averaged 61%. Historical fishery trends along the Pacific coast and the results of very limited population studies indicate that this level of exploitation is likely to be sustainable by mixed coastal coho stocks. However, more intensive sustained mixed-stock exploitation at average rates between 75-80% has apparently led to a serious long-term decline in British Columbia's Georgia Strait coho stocks based on trends in both catch and escapement. Currently available data from throughout the Pacific coast suggests that an optimum continuous harvest rate for mixed coastal coho stocks is in the range of 65-70%. As a management guideline, the average harvest rate on stocks caught primarily in highly mixed-stock fisheries should be limited to an average total harvest rate of no greater than 70%. Stock groups that can be more readily assessed and managed based on abundance may be harvested at higher levels if they have a historically demonstrated ability to sustain such intensive exploitation.

Southeast Alaska has experienced very large returns of coho salmon in recent years, due primarily to above average survival rates. During this time, stocks in the southern part of the region have had total exploitation rates that are very close to the maximum level. For the most part, escapements to this area have been adequate. However, as survival rates return to long-term averages, it will be critical that these exploitation rates not be exceeded in order to maintain adequate escapements.

Finally, in 1993, the troll fishery underwent restrictions mandated by the NMFS to reduce impacts on the Snake River Fall Chinook Salmon which is listed as threatened under the Federal Endangered Species Act.

Other stocks, including the Columbia River mid-river summer chinook have also been petitioned for listing. At this time, it is unclear what future impacts will occur as a result of these listings.

Table 1. Southeast Alaska Region annual commercial troll salmon catches in numbers by species by calendar year for 1960 to 1979, and by season (October 1 - September 30) for 1979-1980 to 1992-1993.^a

Year	Chinook	Sockeye	Coho	Pink	Chum	Total
1960	282,404	939	396,211	25,563	2,453	707,570
1961	204,289	1,264	399,932	19,303	2,679	627,467
1962	173,597	1,181	643,740	75,083	2,676	896,277
1963	243,679	2,014	693,050	106,939	6,230	1,051,912
1964	329,461	1,004	730,766	124,566	2,576	1,188,373
1965	308,902	1,872	695,887	81,127	6,359	1,094,147
1966	282,083	679	528,621	63,623	5,203	880,209
1967	274,678	157	443,677	57,372	7,051	782,935
1968	304,455	574	779,500	126,271	2,791	1,213,591
1969	290,168	444	388,443	83,727	1,708	764,490
1970	304,599	477	267,635	70,071	2,804	645,586
1971	311,439	929	391,279	104,557	7,602	815,806
1972	242,282	1,060	791,941	166,771	11,634	1,213,688
1973	307,806	1,222	540,105	134,586	10,460	994,179
1974	322,099	2,603	845,109	263,083	13,818	1,446,712
1975	287,342	1,098	214,170	76,882	2,784	582,276
1976	231,239	1,266	524,762	193,786	4,251	955,304
1977	271,735	5,701	506,845	281,244	11,617	1,077,142
1978	375,433	2,804	1,100,902	617,633	26,193	2,122,965
1979	338,319	7,018	918,845	629,144	24,661	1,917,987
1980	303,878	2,921	696,391	266,885	12,048	1,282,123
1981	248,791	7,476	860,836	579,524	8,680	1,705,307
1982	242,315	2,365	1,316,013	503,578	5,700	2,069,971
1983	269,790	8,017	1,275,788	498,242	20,308	2,072,145
1984	235,629	9,559	1,132,637	572,351	28,028	1,978,204
1985	216,086	7,724	1,598,981	967,780	52,908	2,843,479
1986	237,557	6,889	2,127,922	181,912	51,391	2,605,671
1987	242,667	9,727	1,041,175	487,069	12,842	1,793,480
1988	231,282	9,306	500,489	520,203	88,399	1,349,679
1989	235,731	20,197	1,415,511	1,771,181	68,988	3,511,608
1990	287,931	9,174	1,831,681	772,477	62,811	2,964,074
1991	263,852	9,886	1,719,765	426,707	28,462	2,448,672
1992	183,951	22,829	1,929,158	673,855	85,013	2,894,806
1993	226,345	25,642	2,391,430	902,704	525,847	4,071,968
Average 1960 to 1993	267,944	5,473	907,697	362,028	33,971	1,578,953

^a Includes Annette Island troll catches.

Table 2. Southeast Alaska Region annual commercial hand troll salmon catches in numbers by species by calendar year for 1975 to 1979, and by season (October 1 -September 30) for 1979-1980 to 1992-1993.^{a,b}

Year	Chinook	Sockeye	Coho	Pink	Chum	Total
1975	27,995	96	40,922	28,853	541	98,407
1976	26,294	516	88,733	44,054	2,061	161,658
1977	33,176	1,740	155,813	116,776	4,143	311,648
1978	54,383	1,155	378,927	243,469	9,573	687,507
1979	58,919	2,448	244,815	281,711	7,926	595,819
1980	52,034	1,257	179,122	111,548	4,532	348,493
1981	33,892	2,171	181,466	173,517	2,582	393,628
1982	36,677	513	260,703	132,135	1,187	431,215
1983	38,635	1,574	235,685	136,656	2,777	415,327
1984	34,287	1,982	178,400	151,227	4,894	370,790
1985	33,129	1,699	260,691	256,243	9,859	561,621
1986	29,718	809	339,423	40,098	6,695	416,743
1987	29,217	2,131	183,222	135,109	3,018	352,697
1988	33,293	1,862	92,274	147,772	14,532	289,733
1989	28,781	2,440	220,254	301,431	6,576	559,482
1990	39,782	1,245	273,527	154,817	6,490	475,861
1991	40,857	1,077	239,074	72,305	3,857	357,170
1992	25,796	1,903	249,519	95,485	6,023	378,726
1993	23,980	1,668	315,420	101,907	34,594	477,569
Average 1975 to 1993						
	35,834	1,489	216,736	143,427	6,940	404,426

^a Includes Annette Island troll catches.

^b Prior to 1975 hand and powatches were not reported separately.

Table 3. Southeast Alaska Region annual commercial power troll salmon catches in numbers by species by calendar year for 1975 to 1979, and by season (October 1 -September 30) for 1979-1980 to 1992-1993.^{ab}

Year	Chinook	Sockeye	Coho	Pink	Chum	Total
1975	259,347	1,002	173,248	48,029	2,243	483,869
1976	204,945	750	436,029	149,732	2,190	793,646
1977	238,559	3,961	351,032	164,468	7,474	765,494
1978	321,050	1,649	721,975	374,164	6,620	1,435,458
1979	279,400	4,570	674,030	347,433	16,735	1,322,168
1980	251,844	1,664	517,269	155,337	7,516	933,630
1981	214,899	5,305	679,370	406,007	6,098	1,311,679
1982	205,638	1,852	1,055,310	371,443	4,513	1,638,756
1983	231,155	6,443	1,040,103	361,586	17,529	1,656,818
1984	201,342	7,577	954,237	421,124	23,134	1,607,414
1985	182,957	6,025	1,338,290	711,537	43,049	2,281,858
1986	207,839	6,080	1,788,499	141,814	44,696	2,188,928
1987	213,450	7,596	857,953	351,960	9,824	1,440,783
1988	197,989	7,444	408,215	372,431	73,867	1,059,946
1989	206,950	17,757	1,195,257	1,469,750	62,412	2,952,126
1990	248,149	7,929	1,558,154	617,660	56,321	2,488,213
1991	222,995	8,809	1,480,691	354,402	24,605	2,091,502
1992	158,155	20,926	1,679,639	578,370	78,990	2,516,080
1993	202,365	23,974	2,076,010	800,797	491,253	3,594,399
Average 1975 to 1993						
	223,633	7,443	999,330	431,496	52,056	1,713,957

^a Includes Annette Island troll catches.

^b Prior to 1975 hand and powatches were not reported separately.

Table 4. The number of hand and power troll permits fished, 1977 to 1993^a.

Year	The Number of Hand Troll Permits	The Number of Power Troll Permits
1977	1,836	750
1978	2,624	816
1979	2,207	819
1980	1,667	842
1981	1,153	793
1982	1,067	810
1983	946	810
1984	860	795
1985	903	830
1986	804	827
1987	763	828
1988	777	828
1989	694	830
1990	699	839
1991	697	854
1992	647	843
1993	599	839

^a 1993 numbers preliminary.

Table 5. Estimated harvest and Alaska hatchery add-on of chinook salmon by commercial and recreational fisheries in Southeast Alaska, 1993 (data from October, 1993).

Fishery	Total Catch	Common Property Catch	Alaska Hatchery Total Contribution			Add-on	Base Catch
			General Fisheries	Terminal	Subtotal		
General Purse Seine and Gillnet							
Seine	8,626	6,377	484	2,249	2,733	2,264	6,362
Gillnet	17,892	11,321	4,433	6,571	11,004	9,117	8,775
Setnet	1,310	1,310	0	0	0	0	1,310
Total	27,828	19,008	4,917	8,820	13,737	11,382	16,446
Annette Island Catches							
Seine	30	30	1	0	1	1	29
Gillnet	268	268	268	0	268	222	46
Trap	36	36	18	0	0	0	36
Total	334	334	287	0	269	223	111
Winter Troll Fishery							
Oct 11-Dec 31	20,273		2,199	0	2,199	1,822	18,451
Jan 1-April 14	42,447		1,653	0	1,653	1,370	41,077
Total	62,720		3,852	0	3,852	3,192	59,528
June Troll Fishery							
Experimental	15,831		6,100	0	6,100	5,054	10,777
Hatchery Access	-		-	-	-	-	-
Terminal	2,849		0	2,849	2,849	2,361	488
Total	18,680		6,100	2,849	8,949	7,415	11,265
Summer Troll Fishery							
July 1-6	101,127		3,163	0	3,163	2,621	98,506
August 21-25	24,865		447	0	447	370	24,495
Sept. 12-20	18,645		1,268	0	1,268	1,051	17,594
Summer Total	144,637		4,878	0	4,878	4,042	140,595
Annette Island	133		34	0	34	28	105
Troll Total	226,170		14,864	2,849	17,713	14,676	211,494
Sport Fishery ^a	49,608		7,200	450	7,650	6,348	43,270
Grand Totals	303,940		27,268	12,119	39,369	32,619	271,321
Alaska Hatchery Add-on						32,619	
Risk Factor						1,750	

^a Sport Fishery totals preliminary pending results of statewide harvest survey.

Table 6. Annual Southeast Alaska commercial and recreational chinook salmon harvests and Alaska hatchery contributions, 1965-1993.

Numbers of Fish (1,000's)							
Year	---- Commercial Fisheries ----			Recreational Fisheries ^c	Total ^d	Alaska Hatchery Harvest	Total Less AK Hatchery
	Troll ^a	Net ^b	Subtotal				
1965	309	28	337	13	350		
1966	282	26	308	13	321		
1967	275	26	301	13	314		
1968	304	27	331	14	345		
1969	290	24	314	14	328		
Ave. 1965-69	292	26	318	13	332		
1970	305	18	323	14	337		
1971	311	23	334	15	349		
1972	242	44	286	15	301		
1973	308	36	344	16	360		
1974	322	24	346	17	363		
Ave. 1970-74	298	29	327	15	342		
1975	287	13	300	17	317		
1976	231	10	241	17	258		
1977	272	13	285	17	302		
1978	375	25	400	17	417		
1979	338	28	366	17	383		
Ave. 1975-79	301	18	318	17	336		
1980	304	20	324	20	344	7	337
1981	249	19	268	21	289	2	287
1982	242	48	290	26	316	1	315
1983	270	19	290	22	312	2	310
1984	236	32	268	22	290	5	285
Ave. 1980-84	260	28	288	22	310	3	307
1985	216	35	252	25	276	14	263
1986	238	22	260	23	283	18	265
1987	243	15	258	24	282	24	258
1988	231	21	253	26	279	30	249
1989	236	24	260	31	291	34	257
Ave. 1985-89	233	24	256	26	282	24	258
1990	288	27	315	51	367	62	305
1991	264	32	295	60	355	70	285
1992	184	31	215	44	260	45	215
1993	226	28	254	49	304	39	271

^a Troll catches prior to 1980 are reported by calendar year. From 1981 to 1990, catches are for the catch accounting year, Oct. 1 to Sept. 30.

^b Purse seine chinook catches reported under net fisheries for 1986-91 do not include chinook less than five pounds reported on fish tickets.

^c Estimates of recreational catches for 1965-76 based on 1977-80 average catch per capita data. Recreational catches for 1977 to 1991 based on Statewide Postal Harvest Surveys.

^d Total reported catches do not include approximately 200 to 400 chinook harvested annually by native food fisheries in several rivers.

Table 7. Southeast Alaska winter troll fishery vessel landings and chinook salmon catches, and comparison with total season troll chinook catches, 1980-1993.

Year	EARLY WINTER POWERTROLL			LATE WINTER POWERTROLL			EARLY WINTER HANDTROLL			LATE WINTER HANDTROLL			TOTAL		
	Number Chinook	Vessel Landings	Chinook per land	Number Chinook	Vessel Landings	Chinook per land	Number Chinook	Vessel Landings	Chinook per land	Number Chinook	Vessel Landings	Chinook per land	Winter Total	Percent	Annual Total
1980	2,579	173	14.9	2,726	149	18.3	1,434	362	4.0	1,320	308	4.3	8,059	2.7	303,878
1981	1,000	78	12.8	6,015	414	14.5	737	201	3.7	1,855	421	4.4	9,607	3.9	248,791
1982	3,156	217	14.5	6,245	522	12.0	1,709	321	5.3	1,508	311	4.9	12,618	5.2	242,315
1983	9,698	582	16.7	15,572	1,017	15.3	2,819	345	8.2	3,039	508	6.0	31,128	11.5	269,790
1984	11,792	826	14.3	15,498	1,428	10.9	2,431	392	6.2	3,117	635	4.9	32,838	13.9	235,629
1985	11,631	629	18.5	6,358	645	9.9	2,604	389	6.7	1,870	503	3.7	22,463	10.4	216,086
1986	13,337	742	18.0	4,940	542	9.1	3,390	458	7.4	1,230	290	4.2	22,897	9.6	237,557
1987	15,146	871	17.4	8,850	717	12.3	3,404	532	6.4	1,229	279	4.4	28,629	11.8	242,667
1988	38,243	1,569	24.4	13,598	1,306	10.4	6,531	1,059	6.2	2,078	478	4.4	60,450	26.1	231,282
1989	20,630	1,601	12.9	8,009	973	8.2	3,796	757	5.0	1,863	407	4.6	34,298	14.6	235,731
1990	15,092	755	20.0	12,975	1,020	12.7	2,522	372	6.8	2,537	457	5.6	33,126	11.5	287,931
1991	17,567	743	23.6	20,314	1,507	13.5	2,161	330	6.6	2,405	530	4.0	42,447	16.2	263,852
1992	24,793	1,385	17.9	39,771	2,066	19.2	3,484	577	6.0	3,783	607	6.2	71,831	39.0	183,951
1993	18,579	983	18.9	38,381	1,869	20.5	1,694	225	7.6	3,846	476	8.1	62,720	27.7	226,170

NOTE: Early winter troll= Oct.1-Dec.31. Late winter troll= Jan.1-Apr.14.

Catches for 1980-1993 are by season (Oct.1-Sept.30). For example, the catch for the 1980 season is taken from Oct.1,1979-Sept.30,1980.

Table 8. The number of salmon harvested and permits fished in the 1993 experimental and terminal troll fisheries.

Experimental Areas	Dates	Days	Week	Permits Chinook		Sockeye	Coho	Pink	Chum	Total
Gravina Island 101-29	6/7-8	2	24	39	414	0	0	0	0	414
	6/14-15	2	25	25	228	0	10	7	0	245
	6/21-24	4	26	29	688	6	127	61	5	887
	6/28-29	2	27	16	309	8	258	112	2	689
		10			1,639	14	395	180	7	2,235
Mountain Pt. 101-45	5/24-25	2	22	21	96	0	0	0	0	96
	6/1-2	2	23	16	97	0	0	0	0	97
	6/7-8	2	24	7	60	0	0	0	0	60
	6/14-17	4	25	13	107	0	6	0	0	113
	6/21-24	4	26	7	79	0	6	1	1	87
		14			439	0	12	1	1	453
Ship Is. Shore 102-80	6/7-8	2	24	10	116	0	0	0	0	116
	6/14-15	2	25	21	157	0	2	0	0	159
	6/21-24	4	26	21	390	2	25	5	1	423
		8			663	2	27	5	1	698
Steamer Pt. 106-30	6/1-2	2	23	30	185	0	0	0	0	185
	6/7-8	2	24	20	248	0	0	0	0	248
	6/14-17	4	25	27	369	0	1	0	0	370
	6/21-23	3	26	22	224	2	9	4	1	240
	6/28-29	2	27	less than 3 permits fished						
		13			1,026	2	10	4	1	1,043
Snow Passage 106-41	6/1-2	2	23	3	21	0	0	0	0	21
	6/7-8	2	24	less than 3 permits fished						
	6/14-16	3	25	6	166	0	1	0	0	167
	6/21-23	3	26	13	227	0	20	50	1	298
	6/28-29	2	27	less than 3 permits fished						
		12			455	0	21	50	1	527
Baht Harbor 108-30	6/1-2	2	23	4	39	0	0	0	0	39
	6/7-8	2	24	less than 3 permits fished						
	6/14-16	3	25	less than 3 permits fished						
	6/21-23	3	26	less than 3 permits fished						
	6/28-29	2	27	less than 3 permits fished						
		10			43	0	0	0	0	43
Little Port Walter 109-10	6/1-2	2	23	11	111	0	25	4	0	140
	6/7-8	2	24	5	44	0	0	0	0	44
	6/14-16	3	25	7	43	0	0	0	0	43
	6/21-24	4	26	22	332	0	33	2	3	370
	6/28-29	2	27	19	209	0	140	44	5	398
		13			739	0	198	50	8	995
Beacon Pt. 6/1-2 110-13	2	23	12	300	0	0	0	0	300	
	6/7-8	2	24	18	393	0	0	0	0	393
	6/14-16	3	25	19	454	0	0	0	3	457
	6/21-22	2	26	19	282	0	1	1	6	290
	6/28-29	2	27	3	19	0	2	0	1	22
		11			1,448	0	3	1	10	1,462
Big Creek 5/24-25 110-16	2	22	20	368	0	0	0	0	368	
	6/1-2	2	23	13	128	0	0	0	0	128
	6/7-8	2	24	5	85	0	0	0	0	85
	6/14-16	3	25	16	468	0	0	0	5	473
	6/21-23	3	26	32	759	0	1	0	9	769
	6/28-29	2	27	11	136	2	2	2	5	147
		14			1,944	2	3	2	19	1,970

-Continued-

Table 8. (Page 2 of 3).

Experimental Areas	Dates	Days	Week	Permits	Chinook	Sockeye	Coho	Pink	Chum	Total
Cape Fanshaw 110-31	5/24-25	2	22	12	278	0	0	0	0	278
	6/1-2	2	23	16	421	0	0	0	0	421
	6/7-8	2	24	12	346	0	0	0	8	354
	6/14-16	3	25	10	227	0	0	0	6	233
	6/21-23	3	26	9	122	0	0	0	17	139
	6/28-29	2	27	less than 3 permits fished						
		14			1,446	0	1	0	38	1,485
Silver Bay 113-35	5/24-25	2	22	52	429	0	0	0	429	
	6/1-4	4	23	52	853	0	0	0	0	853
	6/7-9	3	24	42	984	0	0	0	0	984
	6/14-18	5	25	57	1,371	0	0	0	1	1,372
	6/21-25	5	26	61	1,454	0	28	0	9	1,491
	6/28-29	2	27	31	543	0	12	0	2	557
	7/7-10	4	28	6	32	0	6	0	0	38
	7/11-17	7	29							
	7/18-24	7	30	5	35	1	44	1	486	567
	7/25-28	4	31	19	64	14	493	327	4,315	5,213
		43			5,765	15	583	328	4,813	11,504
Cross Sound 114-21	6/14-16	3	25	18	121	272	136	1,344	574	2,447
	6/21-23	3	26	50	88	971	3,765	19,270	3,408	27,502
	6/28-30	3	27	39	15	733	2,155	33,737	3,332	39,972
	7/7-10	4	28	61	0	960	4,530	67,389	3,069	75,948
	7/11	1	29	33	0	245	3,023	21,809	1,283	26,360
		14			224	3,181	13,609	143,549	11,666	172,229
Experimental Fishery Totals by Week			22	105	1,171	0	0	0	0	1,171
			23	157	2,155	0	25	4	0	2,184
			24	158	2,690	0	0	0	8	2,698
			25	219	3,711	272	156	1,351	589	6,079
			26	285	4,645	981	4,015	19,394	3,461	32,496
			27	119	1,231	743	2,569	33,895	3,347	41,785
			28	67	32	960	4,536	67,389	3,069	75,986
			29	33	0	245	3,023	21,809	1,283	26,360
			30	5	35	1	44	1	486	567
			31	19	64	14	493	327	4,315	5,213
					15,734	3,216	14,861	144,170	16,558	194,539
Terminal Areas										
Carroll Inlet 101-46	5/18-22	5	21	less than 3 permits fished						
	5/23-29	7	22	5	15	0	0	0	0	15
	5/30-6/5	7	23	8	24	0	0	0	0	24
	6/6-12	7	24	9	71	0	0	0	0	71
	6/13-19	7	25	14	116	0	0	0	0	116
	6/20-26	7	26	11	107	2	13	3	0	125
	6/27-30	3	27	44	42	0	3	10	0	55
		43			377	2	16	13	0	408
Wrangell Narrows 106-44	6/1-5	4	23	23	143	0	0	0	0	143
	6/6-12	7	24	30	417	0	0	0	0	417
	6/13-19	7	25	39	761	0	0	0	0	761
	6/20-26	7	26	29	676	0	0	0	0	676
	6/27-30	3	27	24	462	0	0	0	0	462
		28			2,459	0	0	0	0	2,459

-Continued-

Table 8. (Page 3 of 3).

Experimental Areas	Dates	Days	Week	Permits	Chinook	Sockeye	Coho	Pink	Chum	Total
Earl West Cove 107-45	6/15-19	5	25	less than 3 permits fished						
	6/20-26	7	26							
	6/27-7/3	7	27							
	7/4-10	7	28	No effort						
	7/11-17	7	29							
	7/18-19	2	30							
35										
Deep Inlet 113-38	7/17	1	29	less than 3 permits fished						
	7/18-22	5	30	6	8	0	0	0	1,581	1,589
	7/25-29	5	31	3	3	0	4	0	790	797
	8/1-5	5	32	9	0	1	17	0	3,840	3,858
	8/8-12	5	33							
	8/15-19	5	34	37	0	1	56	10	10,213	10,280
	8/22-26	5	35	less than 3 permits fished						
	9/1-4	4	36	4	0	0	11	2	1,077	1,090
9/8-11	4	37	9	0	0	70	1	1,230	1,301	

39				11		2	159	13	20,339	20,524

Table 9. Chinook salmon catch per fleet day in the Southeast Alaska summer troll fishery, 1984-1993.

- - - Number of Fish in Thousands - - -				
Year	Fishing Period	Number of Days	Chinook Catch	Fish Per Fleet Day
1984	JUN 5-30	26	130	5.0
	JUL 11-29	19	77	4.1
	COMBINED	45	207	4.6
1985	JUN 3-12	10	66	6.6
	JUL 1-22	22	114	5.2
	COMBINED	32	180	5.6
1986 ^a	JUN 20 - JUL 15	26	155	6.0
1987 ^a	JUN 20 - JUL 12	23	209	9.1
1988 ^a	JULY 1-12	12	162	13.5
1989 ^b	JULY 1-13	13	167	12.9
1990 ^b	JULY 1-22	22	200	9.1
	AUGUST 23-24	2	12	5.9
	COMBINED	24	212	8.8
1991 ^c	JULY 1-8 (noon)	7.5	154	20.5
1992	JULY 1-4 (noon)	3.5	66	18.9
	AUGUST 23	1	7	7.0
	COMBINED	4.5	73	16.2
1993	JULY 1-6	6	101	16.8
	AUGUST 21-25	5	25	5.0
	SEPTEMBER 12-20	9	19	2.1
	COMBINED	20	144	7.2

^a From 1986-1988 limited troll openings were allowed several days each week during June in a number of near-terminal hatchery areas.

^b In 1989 and 1990, troll fisheries were open from June 5-7 and from June 21-23 in most inside fishing districts to access Alaska hatchery chinook salmon. In addition, limited troll openings were allowed during several days in June in near-terminal hatchery areas.

^c In 1991, troll fisheries were open from June 5-7 and June 21-22 in most inside fishing districts to access Alaska hatchery chinook salmon. In addition, limited troll openings were allowed during several days in June in near-terminal hatchery areas.

Table 10. Number of days and dates the Southeast Alaska troll fishery was open to chinook salmon fishing during the general summer season April 15 through September 30, 1978, to present.

Year	Days ^a Open	Days Closed	Open Periods	Number of Days	Closed Periods	Number ^b of Days	Chinook Non-Retention
1978	169	0	Apr 15-Sept 30	169	None		0
1979	169	0	Apr 15-Sept 30	169	None		0
1980	149	20	Apr 15-July 14 July 25-Sept 20	91 58	July 15-July 24 Sept 21-Sept 30	10 ALL 10 ALL	0
1981	101	69	May 15-June 25 July 5-Aug 6 Aug 20-Sept 3 Sept 13-Sept 20	42 36 15 8	Apr 15-May 14 Jun 26-Jul 4 Aug 10-Aug 19 Sept 4-Sept 12 Sept 21-Sept 30	30 ALL 9 ALL 10 ALL 9 10 ALL	9
1982	65	104	May 15-June 6 June 17-Jul 28	23 42	Apr 15-May 14 June 7-June 16 July 29-Aug 7 Aug 8-Sept 20 Sept 21-30	30 ALL 10 ALL 10 ALL 44 10 ALL	44
1983	60	109	May 15-June 8 July 1-Aug 4	25 35	Apr 15-May 14 June 9-June 30 Aug 5-Aug 14 Aug 15-Sept 20 Sept 21-30	30 ALL 22 ALL 10 ALL 37 10 ALL	37
1984	45	124	June 5-June 30 July 11-July 29	26 19	Apr 15-June 4 July 1-July 10 July 30-Aug 14 Aug 15-Aug 24 Aug 25-Sept 20 Sept 21-Sept 30	51 ALL 10 ALL 16 10 ALL 27 10 ALL	43
1985	33.6	135.4	June 3-June 12 July 1-July 22 Aug 25-Aug 26 ^c	10 22 1.6	Apr 15-June 2 June 13-June 30 July 23-Aug 14 Aug 15-Aug 24 Aug 26-Sept 20 Sept 21-30	49 ALL 18 ALL 23 10 ALL 25.4 10 ALL	48.4
1986	41	128	June 20-July 15 Aug 21-Aug 26 Sept 1-Sept 9	26 6 9	Apr 15-June 19 July 16-Aug 10 Aug 11-Aug 20 Aug 27-Aug 31 Sept 10-Sept 20 Sept 21-Sept 30	66 ALL 26 10 ALL 5 11 10 ALL	42
1987	23	146	June 20-July 12	23	Apr 15-June 19 July 13-Aug 2 Aug 3-Aug 12 Aug 13-Sept 20 Sept 21-Sept 30	66 ALL 21 10 ALL 39 10 ALL	60

-Continued-

Table 10. (page 2 of 2.)

Year	Days ^a Open	Days Closed	Open Periods	Number of Days	Closed Periods	Number ^b of Days	Chinook Non-Retention
1988	12	157	July 1-July 12	12	Apr 15-June 30 July 13-July 25 July 26-Aug 4 Aug 5-Aug 14 Aug 15-Aug 24 Aug 25-Aug 31 Sept 1-Sept 3 Sept 4-Sept 20 Sept 21-Sept 30	77 ALL 13 10 ALL 10 10 ALL 7 3 ALL 17 10 ALL	47
1989 ^d	13	156	July 1-July 13	13	Apr 15-June 30 July 14-Aug 13 Aug 14-Aug 23 Aug 24-Sept 20 Sept 21-Sept 30	77 ALL 31 10 ALL 28 10 ALL	59
1990 ^d	24	145	July 1- July 22 Aug 23-Aug 24	22 2	Apr 15-June 30 July 23-Aug 12 Aug 13-Aug 22 Aug 25-Sept 20 Sept 21-Sept 30	77 ALL 21 10 ALL 27 10 ALL	48
1991 ^d	7.5	161.5	July 1-July 8	7.5	Apr 15-June 30 July 8-Aug 15 Aug 16-24 Aug 25-Sept 20 Sept 21-30	77 ALL 38.5 10 ALL 26 10 ALL	64.5
1992 ^d	4.5	164.5	July 1-4 August 23	3.5 1	April 15-June 30 July 4-Aug 12 Aug 13-22 Aug 24-Sept 20 September 21-30	77 ALL 39.5 10 ALL 28 10 ALL	67.5
1993	20	149	July 1-6 August 21-25 Sept. 12-20	6 5 9	April 15-June 30 July 7-11 July 12-August 12 August 13-20 August 26-Sept 11 September 21-30	77 ALL 5 ALL 32 8 ALL 17 10 ALL	49

^a Number of days the major portion of Southeast Alaska was open to chinook salmon fishing.

^b The closures designated "ALL" are regionwide for all species by troll gear.

^c Trolling was open to all species for 39 hours, 12:01 a.m. August 25 to 3:00 p.m. August 26.

^d Hatchery Access fisheries were conducted for 6 days each year except in 1991 when only 4.5 were open.

Table 11. Catch by week by species by the commercial troll fishery, 1993 accounting year.

Year	Week	Chinook	Sockeye	Coho	Pink	Chum	Total
1992	42	3,919	0	0	0	0	3,919
1992	43	960	0	0	0	0	960
1992	44	2,506	0	0	0	0	2,506
1992	45	3,563	0	0	0	0	3,563
1992	46	3,085	0	0	0	0	3,085
1992	47	2,163	0	0	0	0	2,163
1992	48	681	0	0	0	0	681
1992	49	829	0	0	0	0	829
1992	50	1,279	0	0	0	0	1,279
1992	51	738	0	0	0	0	738
1992	52	481	0	0	0	0	481
1992	53	69	0	0	0	0	69
1993	1	228	0	0	0	0	228
1993	2	374	0	0	0	0	374
1993	3	417	0	0	0	0	417
1993	4	168	0	0	0	0	168
1993	5	1,709	0	0	0	0	1,709
1993	6	541	0	0	0	0	541
1993	7	470	0	0	0	0	470
1993	8	779	0	0	0	0	779
1993	9	456	0	0	0	0	456
1993	10	747	0	0	0	0	747
1993	11	897	0	0	0	0	897
1993	12	1,242	0	0	0	0	1,242
1993	13	1,439	0	0	0	0	1,439
1993	14	6,121	0	0	0	0	6,121
1993	15	17,350	0	0	0	0	17,350
1993	16	9,509	0	0	0	0	9,509
1993	21	2	0	0	0	0	2
1993	22	1,186	0	0	0	0	1,186
1993	23	2,322	0	25	4	0	2,351
1993	24	3,217	0	0	0	8	3,225
1993	25	4,593	272	156	1,351	589	6,961
1993	26	5,429	983	4,028	19,397	3,461	33,298
1993	27	25,639	1,277	41,253	60,444	7,333	135,946
1993	28	77,311	2,350	155,681	121,272	16,171	372,785
1993	29	0	485	321,816	129,612	27,606	481,516
1993	30	43	3,936	341,308	161,518	43,994	550,791
1993	31	67	4,486	251,844	139,723	55,372	451,492
1993	32	0	3,293	198,030	133,235	108,518	443,076
1993	33	0	1,869	176,014	84,347	91,749	353,979
1993	34	6,816	364	31,842	2,435	24,373	65,830
1993	35	18,049	1,833	225,390	29,249	80,484	355,005
1993	36	0	1,427	232,346	12,180	49,137	295,090
1993	37	0	443	166,832	4,119	11,991	183,385
1993	38	13,887	541	188,621	2,636	2,748	208,433
1993	39	5,244	86	58,542	1,197	662	65,731
		226,525	23,645	2,393,728	902,719	524,196	4,072,802

Table 12. Contribution in numbers and percent of chinook salmon produced by Alaskan and other hatcheries, in the winter, experimental, terminal, hatchery access and general summer troll fisheries, 1989 - 1993.

Fishery	Total Catch ^b	Alaskan Hatchery		Other Hatcheries		Total Hatcheries	
		Number	Percent	Number	Percent	Number	Percent
Winter							
1989	34,300	4,710	13.7	7,039	20.5	11,749	34.3
1990	33,100	4,433	13.4	9,845	29.7	14,278	43.1
1991	42,400	10,106	23.8	13,399	31.6	23,505	55.4
1992	71,800	6,976	9.7	28,875	40.3	35,851	49.9
1993	62,700	3,852	6.1	25,598	40.8	29,450	47.0
Experimental							
1989	2,300	854	32.8	39	1.7	893	34.3
1990	7,200	4,425	62.3	*		4,425	62.3
1991	13,900	6,558	46.8	1,903	13.7	8,461	60.4
1992	11,200	5,378	48.0	2,663	23.8	8,041	71.8
1993	15,800	6,100	38.6	2,001	12.6	8,101	51.3
Terminal							
1989	1,100	1,100	100				
1990	16	16	100				
1991	6,000	6,000	100				
1992	4,100	4,118	100				
1993	2,800	2,849	100				
Hatchery Access							
1989	31,200	4,575	14.7	8,310	26.6	12,885	42.4
1990	34,900	6,532	18.8	12,700*	36.5	19,232	55.1
1991	46,500	9,131	19.6	10,812	23.3	19,943	42.9
1992	23,800	6,627	27.8	8,590	36.0	15,217	63.9
1993		- no fishery in 1993 -					
General Summer							
1989	167,600	5,225	3.1	30,268	18.1	35,493	21.2
1990	211,900	14,189	6.7	70,908	33.5	85,097	40.2
1991	154,000	4,939	3.2	54,131	35.2	59,070	38.4
1992	72,600	2,459	3.4	30,823	42.5	33,282	45.9
1993	144,600	4,876	3.4	37,361	25.8	42,237	29.2
Total							
1989	236,000	16,464	7.0	45,656	19.3	62,120	26.3
1990	287,026	29,595	10.3	93,453	32.6	123,048	42.9
1991	262,900	36,734	14.0	80,245	30.5	116,979	44.5
1992	183,500	25,558	13.9	70,951	38.7	96,509	52.6
1993	225,900	17,677	7.8	64,960	28.7	82,637	36.6

* 1990 hatchery access total for other hatchery production includes experimental fishery.

^b Totals may not agree with other totals due to rounding.

Table 13. Total Southeast Alaska troll coho salmon catch and estimated wild and hatchery contributions, 1960-1993.^{ab}

Year	Number of Fish					Percent Hatchery
	Total Catch	Wild Contribution	Alaska Hatchery	Other Hatchery	Total Hatchery	
1960	396,211	396,211	0	0	0	0.0
1961	399,932	399,932	0	0	0	0.0
1962	643,740	643,740	0	0	0	0.0
1963	693,050	693,050	0	0	0	0.0
1964	730,766	730,766	0	0	0	0.0
1965	695,887	695,887	0	0	0	0.0
1966	528,621	528,621	0	0	0	0.0
1967	443,677	443,677	0	0	0	0.0
1968	779,500	779,500	0	0	0	0.0
1969	388,443	388,459	0	0	0	0.0
1970	267,635	267,647	0	0	0	0.0
1971	391,279	391,279	0	0	0	0.0
1972	791,941	791,947	0	0	0	0.0
1973	540,105	540,125	0	0	0	0.0
1974	845,109	844,748	0	0	0	0.0
1975	214,170	214,170	0	0	0	0.0
1976	524,762	524,762	0	0	0	0.0
1977	506,845	506,887	0	0	0	0.0
1978	1,100,902	1,100,902	0	0	0	0.0
1979	918,845	918,845	0	0	0	0.0
1980	696,391	704,297	2,876	187	3,063	0.4
1981	860,836	846,088	15,918	171	16,089	1.9
1982	1,316,013	1,285,969	35,400	177	35,577	2.7
1983	1,275,788	1,227,242	51,709	567	52,276	4.1
1984	1,132,637	1,062,327	68,594	1,015	69,609	6.1
1985	1,598,981	1,499,661	106,111	181	106,292	6.6
1986	2,127,922	1,850,004	268,215	7,940	276,155	13.0
1987	1,041,175	950,757	87,074	3,344	90,418	8.7
1988	500,489	472,334	25,885	1,600	27,485	5.5
1989	1,415,511	1,295,033	116,519	3,959	120,478	8.5
1990	1,831,681	1,540,772	278,830	11,913	290,743	15.9
1991	1,719,765	1,336,440	366,684	15,983	382,667	22.3
1992	1,928,956	1,508,990	419,966	17,519	419,966	21.8
1993	2,391,255	2,000,499	377,216	13,540	390,756	16.3
60-69 Avg.	569,984	569,984	0	0	0	0.0
70-79 Avg.	610,131	610,131	0	0	0	0.0
80-89 Avg.	1,196,574	1,119,371	77,830	1,914	79,744	5.8
90-93 Avg.	1,967,914	1,596,675	360,674	14,739	375,413	19.1

^a Hatchery contribution estimates are unavailable before 1980. Because hatchery production was very low, all catch during 1960-1979 was assumed to be from wild stocks.

^b 1993 data is preliminary.

Table 14. Preliminary estimates of total escapements of chinook salmon to escapement indicator systems and to southeast Alaska and transboundary (T) rivers, 1975-1993.*

Year	MAJOR SYSTEM										MEDIUM SYSTEMS										MINOR SYSTEMS										TOTAL
	Alsek (T)	Taku (T)	Stikine ^b (T)	Major (T)	Stuk Andrew ^c	Unuk (T)	Chuk-min (T)	Blossom	Kela	Bedum	Medium Unsurv.	Medium Subt.	King Salim	Minor ^d Unsurv.	Minor Subt.	ALL SYSTEMS															
1975	4,214	5,854 ^e	5,800	15,868	1,510	1,469	588	234	325	2,616	2,271	6,813	53	1,113	1,166	23,847															
1976	1,672	12,729	3,300	17,701	1,433	1,469	147	109	134	1,859	1,848	5,544	81	1,701	1,782	25,027															
1977	4,363	15,259	6,600	26,222	1,732	1,558	363	179	368	2,468	2,328	6,984	168	3,528	3,696	36,902															
1978	4,050	9,168	5,200	18,418	814	1,770	290	229	627	2,916	2,059	6,177	71	1,491	1,562	26,157															
1979	6,101	11,353	9,328	26,782	1,400	922	224	86	682	1,914	1,821	5,462	89	1,669	1,958	34,202															
1980	3,770	20,275	17,096	41,141	905	1,626	418	142	307	2,493	1,840	5,520	88	1,848	1,936	48,597															
Average	4,028	12,440	7,887	24,555	1,299	1,469	338	163	407	2,378	2,028	6,083	92	1,925	2,017	32,455															
1981	2,837	25,856	26,672	55,365	702	1,170	614	254	526	2,564	1,901	5,703	113	2,373	2,486	63,554															
1982	3,078	12,810	22,640	38,528	434	2,162	914	552	1,206	4,834	2,970	8,910	286	6,006	6,292	53,730															
1983	3,352	5,621	4,752	13,725	592	1,800	922	942	1,315	4,979	2,969	8,906	245	5,145	5,390	28,021															
1984	2,038	10,748	10,352	23,138	1,726	2,939	1,763	813	976	6,491	4,303	12,909	250	5,250	5,500	41,547															
1985	1,853	19,580	12,456	33,889	1,521	1,894	1,530	1,134	998	5,556	3,794	11,381	171	3,591	3,762	49,032															
Average	2,632	14,923	15,374	32,929	945	1,993	1,149	739	1,004	4,885	3,187	9,562	213	4,473	4,686	47,177															
1986	3,966 ^f	20,231	11,564	35,761	2,067	1,111	2,683	2,045	1,104	9,234	6,216	18,648	245	5,145	5,390	59,799															
1987	3,598	15,330	19,132	38,260	1,884	1,261	1,560	2,158	1,229	8,104	5,625	16,874	193	4,053	4,246	59,380															
1988	2,891	23,334	29,168	55,393	885	2,794	1,258	614	920	5,566	3,616	10,847	206	4,326	4,532	70,772															
1989	3,399	25,481	18,860	47,740	652	1,818	1,494	550	1,848	5,730	3,615	10,845	238	4,998	5,236	63,821															
1990	2,722	32,622	17,568	52,912	700	1,062	902	411	970	3,229	2,496	7,487	168	3,528	3,696	64,995															
Average	3,315	23,440	19,258	46,013	1,238	1,012	1,579	1,156	1,214	6,377	4,313	12,940	210	4,410	4,620	63,573															
1991	3,165	27,318	18,024	48,507	875	1,048	779	382	435	2,644	2,080	6,239	134	2,814	2,948	57,694															
1992	1,950	30,142	26,508	58,600	1,400	1,245	554	240	347	2,541	2,593	7,779	117	2,457	2,574	68,953															
1993	4,852	36,208	46,000	87,060	790	1,696	622	485	579	3,395	2,941	8,822	280	5,880	6,160	102,042															
Average	3,322	31,223	28,460	64,722	1,022	1,194	652	369	454	2,860	2,538	7,613	177	3,717	3,894	76,229															
1993 CHANGE FROM 1992	2,902	6,066	19,492	28,460	(610)	451	68	245	232	854	348	1,043	163	3,423	3,586	33,089															
Number	2,902	6,066	19,492	28,460	(610)	451	68	245	232	854	348	1,043	163	3,423	3,586	33,089															
Percent	149%	20%	74%	49%	-44%	36%	12%	102%	67%	34%	13%	13%	139%	139%	139%	48%															
Goals	7,300	36,515	21,200	65,015	600 ^g	750	2,880	1,440	800	6,400	3,875	11,625	250	5,250	5,500	82,140															

Index escapements are expanded for survey counting rates and unsurveyed tributaries. Using 1992 revised expansions.

Prior to Little Taku weir in 1985, Stikine estimate is 8 times aerial survey.

Andrew Creek revised to include North Fork counts, egg lakes excluded, weir counts not expanded.

Chilkat excluded from medium goals

Taku counts expanded for missing tributaries when all six not surveyed.

Using CTC calculations of Alsek Escapement: Escapement = (weir count/0.64)-sport and IFP harvest.

Stuk escapement goal revised downward from 2,100 to 600 in 1991.

Table 15. Estimated harvest rates for four coded-wire tagged indicator stocks by the Alaska troll fishery and by all fisheries combined, 1982-1993.^a

Troll Fishery

Year	Stock (Troll Harvest Rate in Percent)				Average
	Auke Lake	Berners River ^b	Ford Arm Lake	Hugh Smith Lake	
1982	20.1	41.6	41.3	45.6	37.2
1983	32.6	50.4	54.3	35.4	43.2
1984	32.3			31.4	38.4 ^c
1985	35.1	44.8	51.2	36.0	41.8
1986	43.0	55.1	60.9	35.4	48.6
1987	37.2	51.3	45.1	28.0	40.4
1988	25.4	39.6	47.9	26.7	34.9
1989	49.6	53.4	61.5	50.0	53.6
1990	43.1	43.6	56.5	39.4	45.7
1991	15.0	18.3	53.4	36.7	30.9
1992	15.8	32.8	56.4	37.6	35.7
1993	38.2	39.3	61.7	51.7	47.7
Average	32.3	42.7	53.7	37.8	41.5

All Fisheries

Year	Stock (Total Harvest Rate in Percent)				Average
	Auke Lake	Berners River ^b	Ford Arm Lake	Hugh Smith Lake	
1982	40.9	75.7	43.6	64.8	56.3
1983	43.8	71.1	69.1	61.5	61.4
1984	43.4			64.9	59.7 ^c
1985	44.2	74.5	51.2	62.6	58.1
1986	53.1	92.9	62.4	60.1	67.1
1987	43.2	76.8	47.5	52.3	55.0
1988	36.5	81.8	49.2	66.5	58.5
1989	55.9	61.9	64.5	82.1	66.1
1990	52.6	67.3	58.5	81.1	64.8
1991	29.8	67.2	54.2	68.1	54.8
1992	22.4	66.6	58.6	71.0	54.7
1993	45.3	68.2	66.8	81.0	65.3
Average	42.6	73.1	56.9	68.0	60.1

^a (1993 data is preliminary).

^b Estimated harvest rates for the Berners River stock are probably biased upward because the escapement estimate is made from intensive ground and helicopter surveys of the drainage instead of total weir counts.

^c The average for 1984 is weighted. The sum of estimates for the Auke and Hugh Smith Lake stocks in 1984 was divided by their average proportional contribution to the sum of estimates for all four systems during 1982-83 and 1985-89. That number was then divided by the total number of stocks (4) to get a weighted average for 1984 that is more comparable with other years than a simple average.

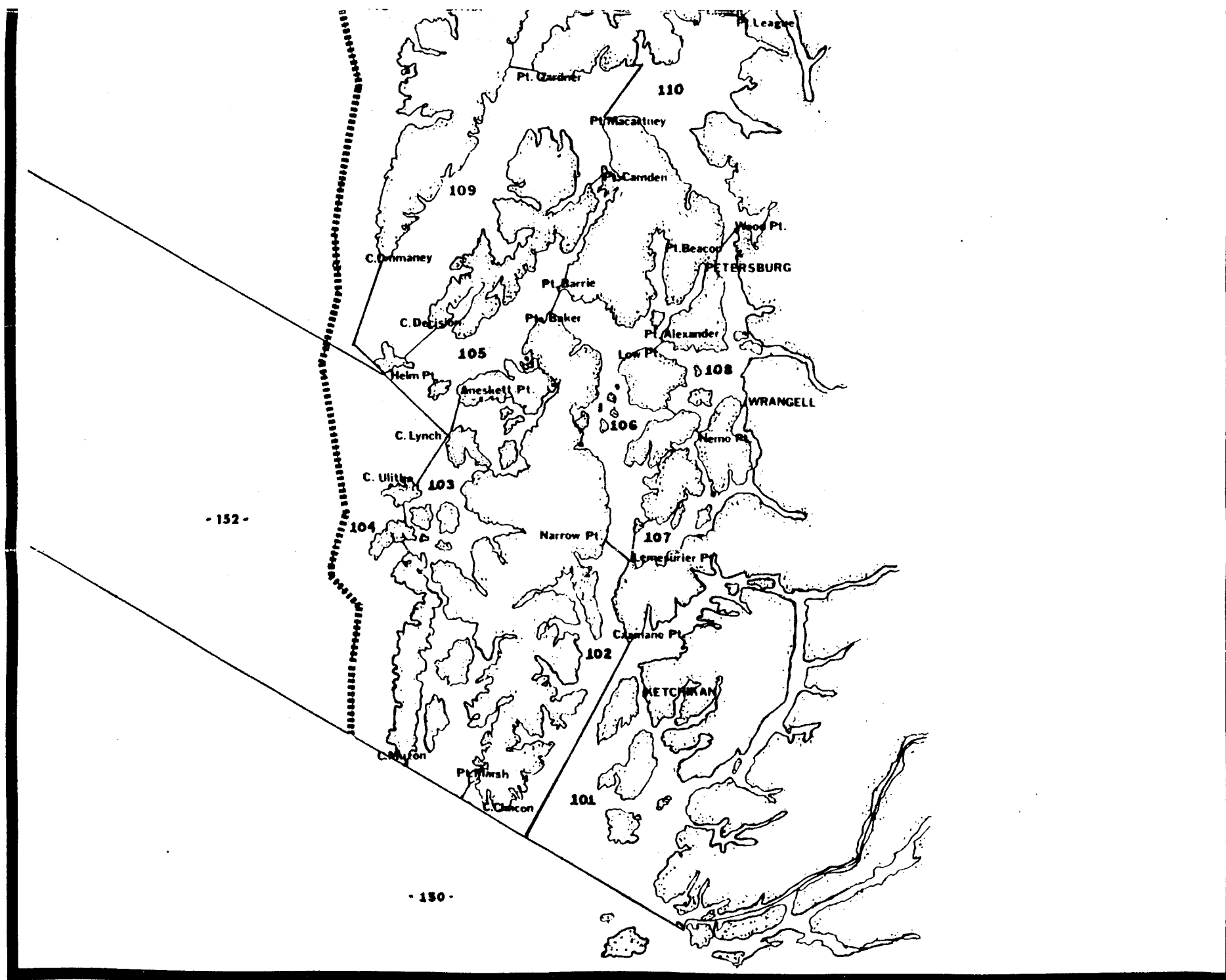


Figure 1. Commercial trolling statistical areas in Southeast Alaska. Fishing districts designated by last two digits of statistical area number.

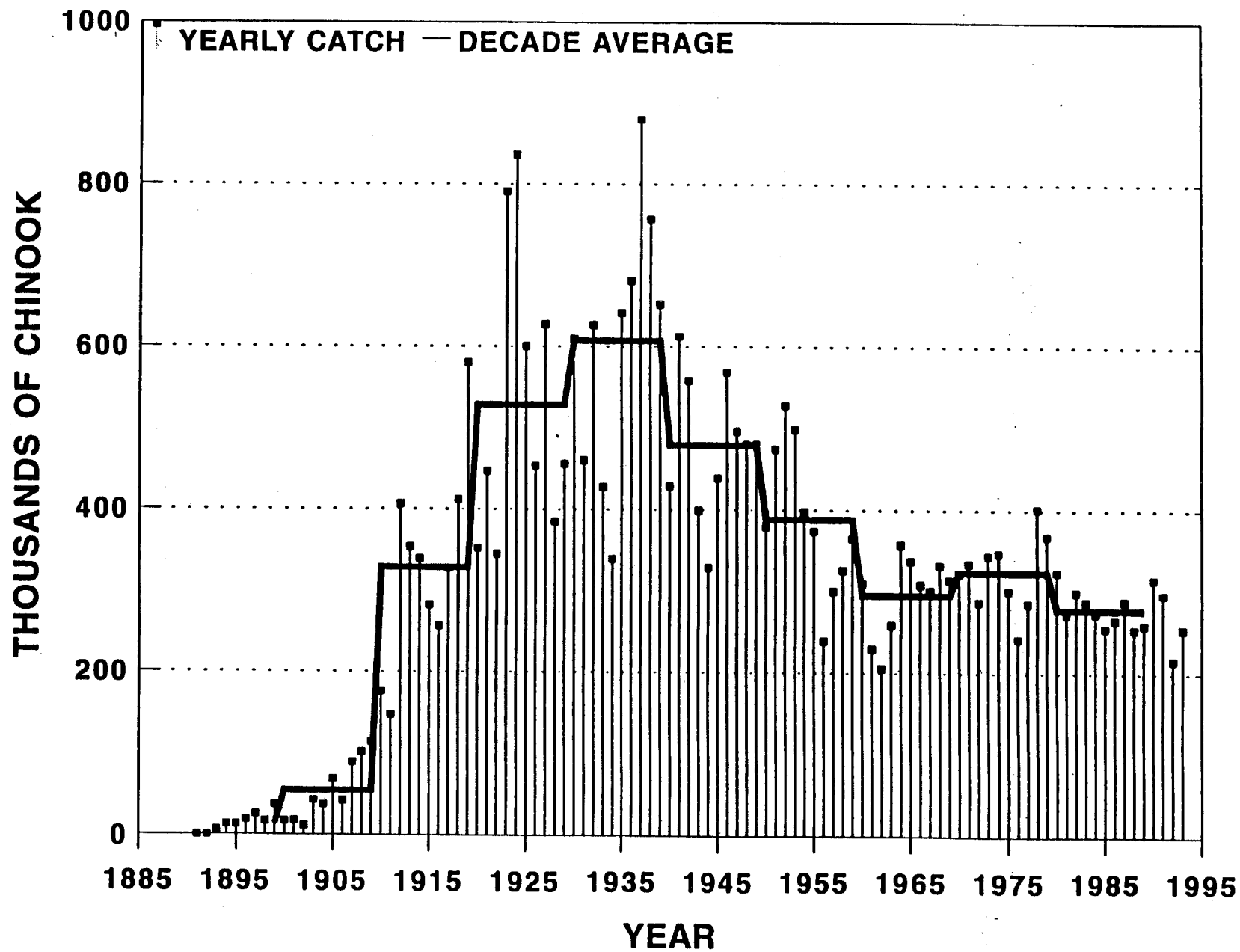


Figure 2. Commercial all gear catches of chinook salmon, 1890-1993, in common property fisheries.

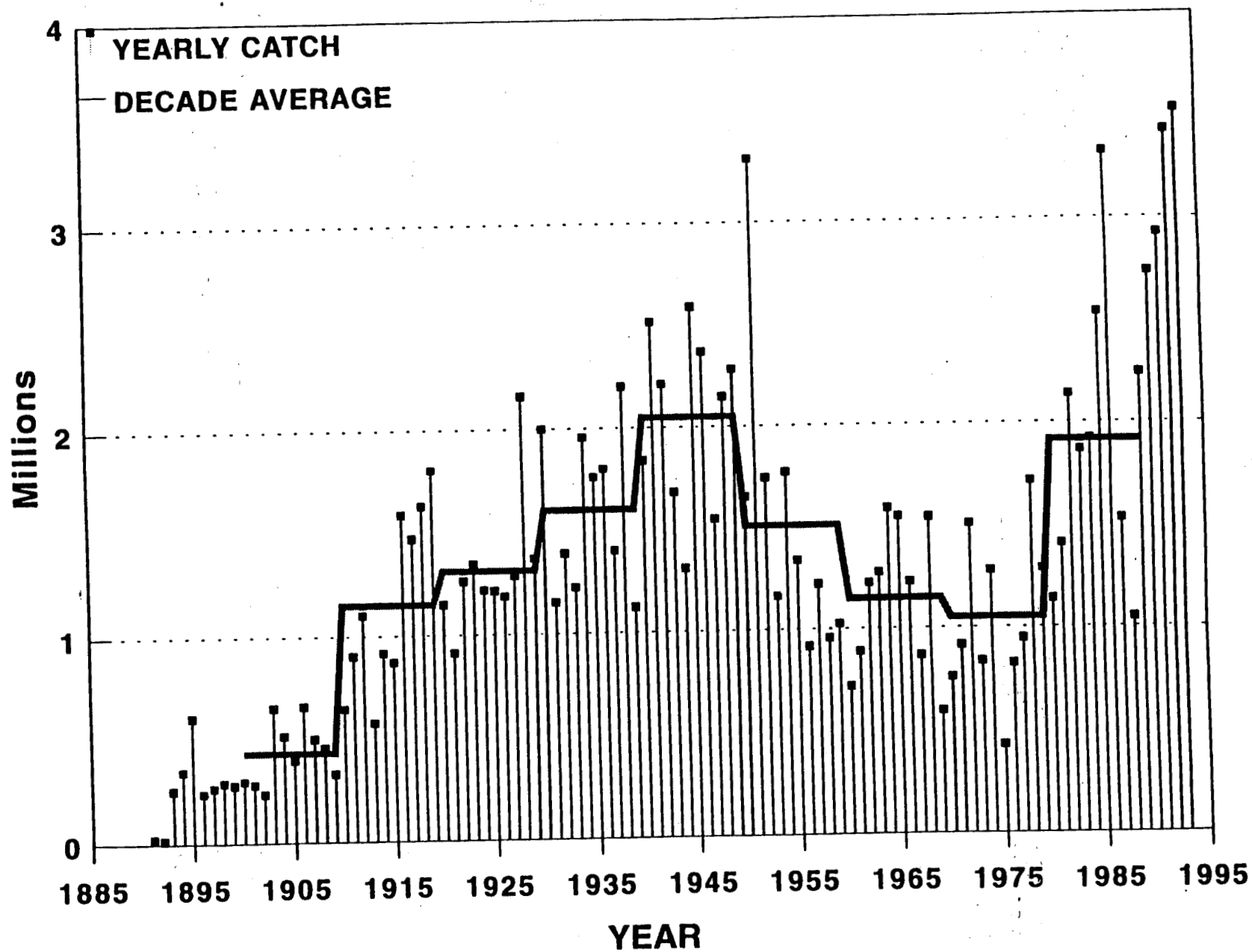


Figure 3. Commercial all gear catches of coho salmon, 1890-1993, in common property fisheries.

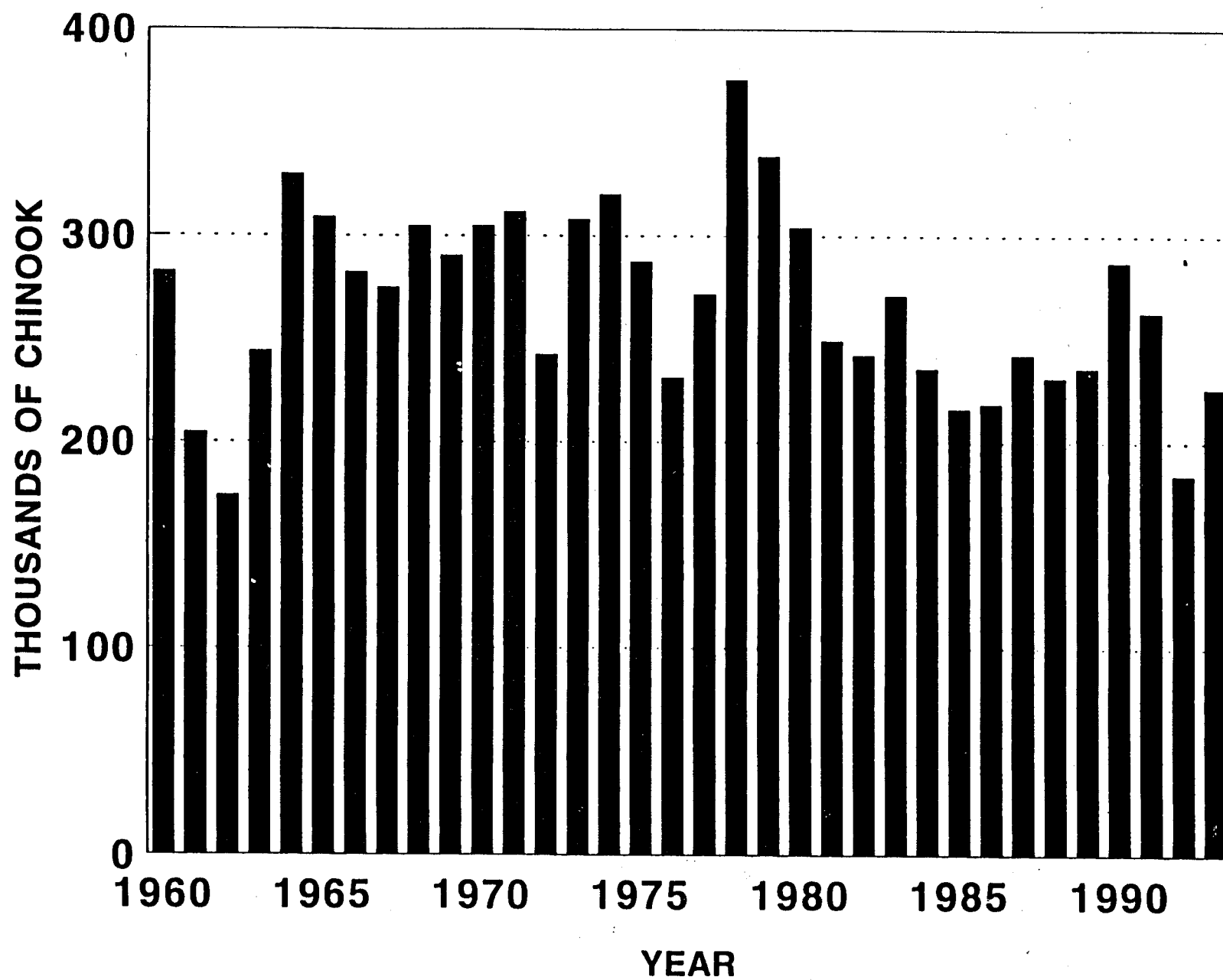


Figure 4. Chinook catches in the Southeast Alaska troll fishery, 1960-1993.

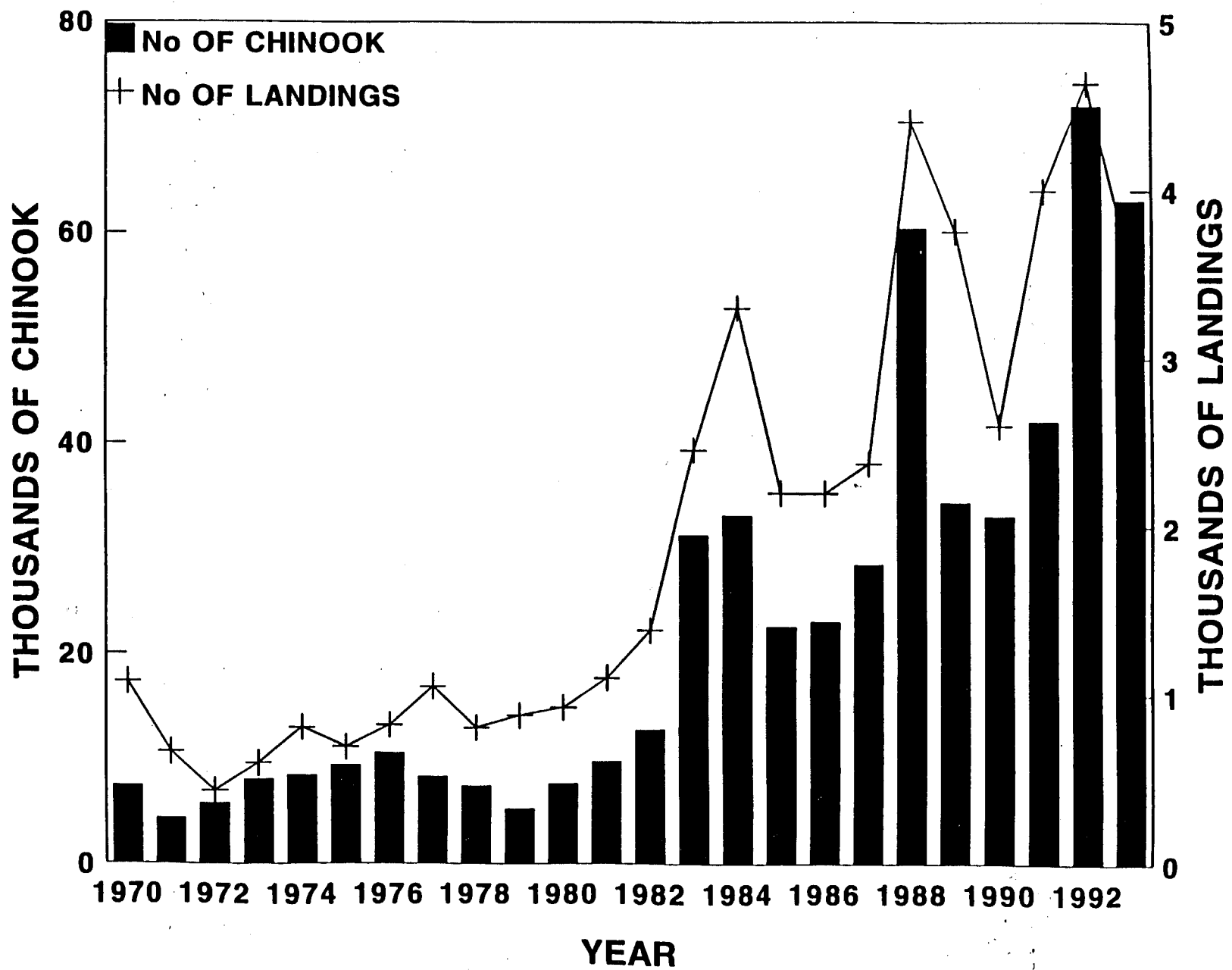


Figure 5. Southeast Alaska winter troll fishery yearly chinook catches and landings, 1970-1993.

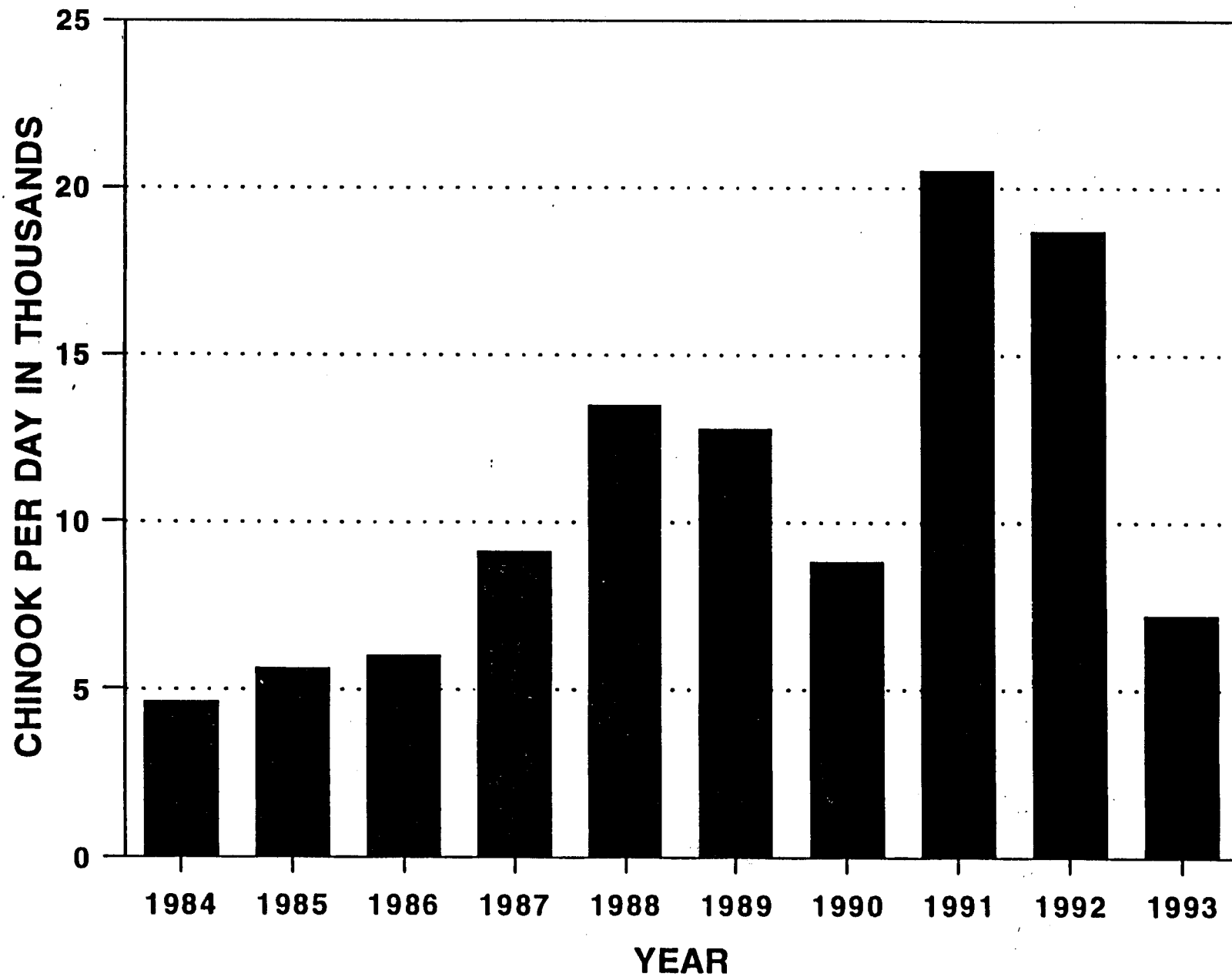


Figure 6. The number of chinook salmon caught by the troll fleet per day in June and July, 1984-1993.

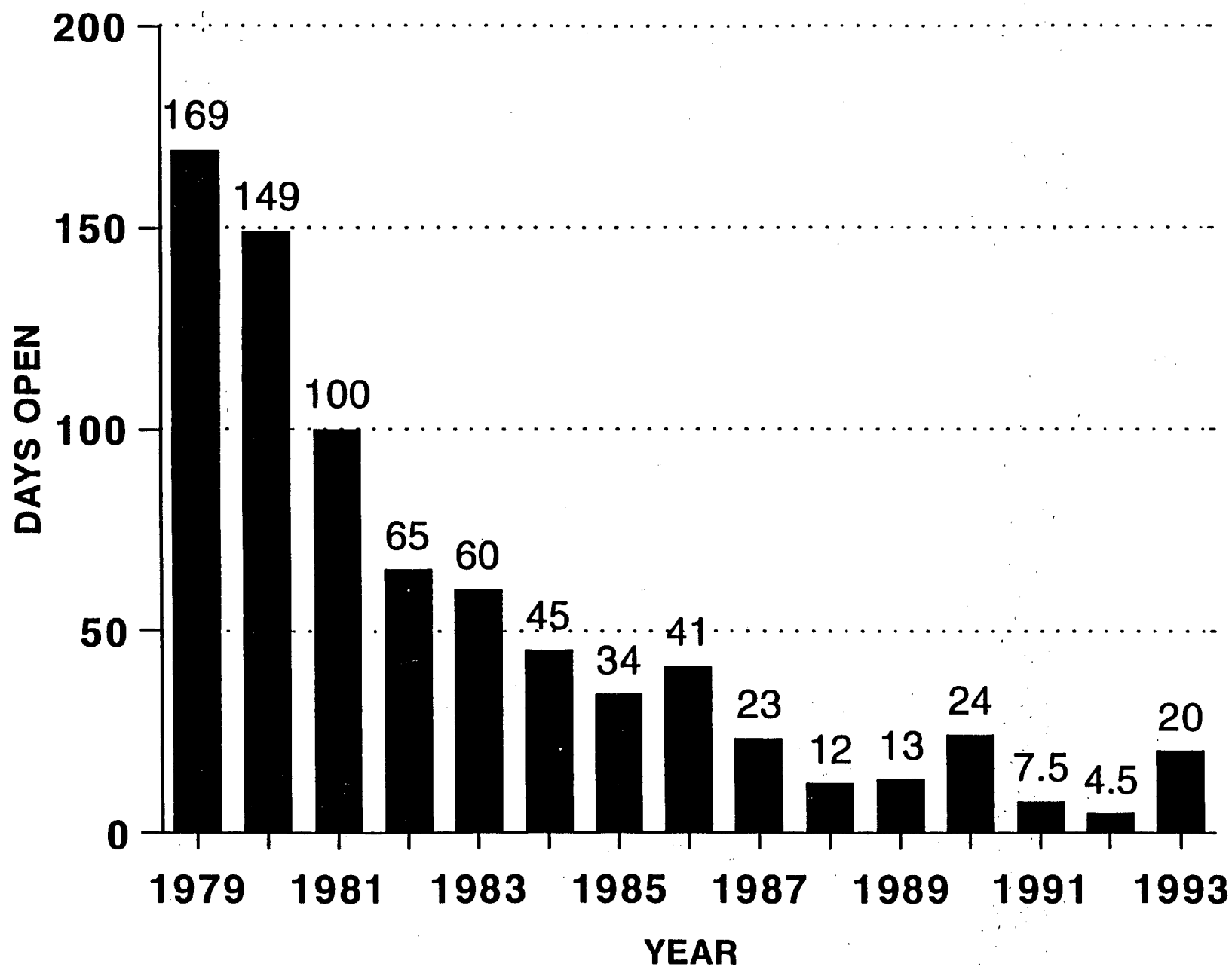


Figure 7. Number of days the general summer troll fishery has been open for chinook salmon, 1979-1993.

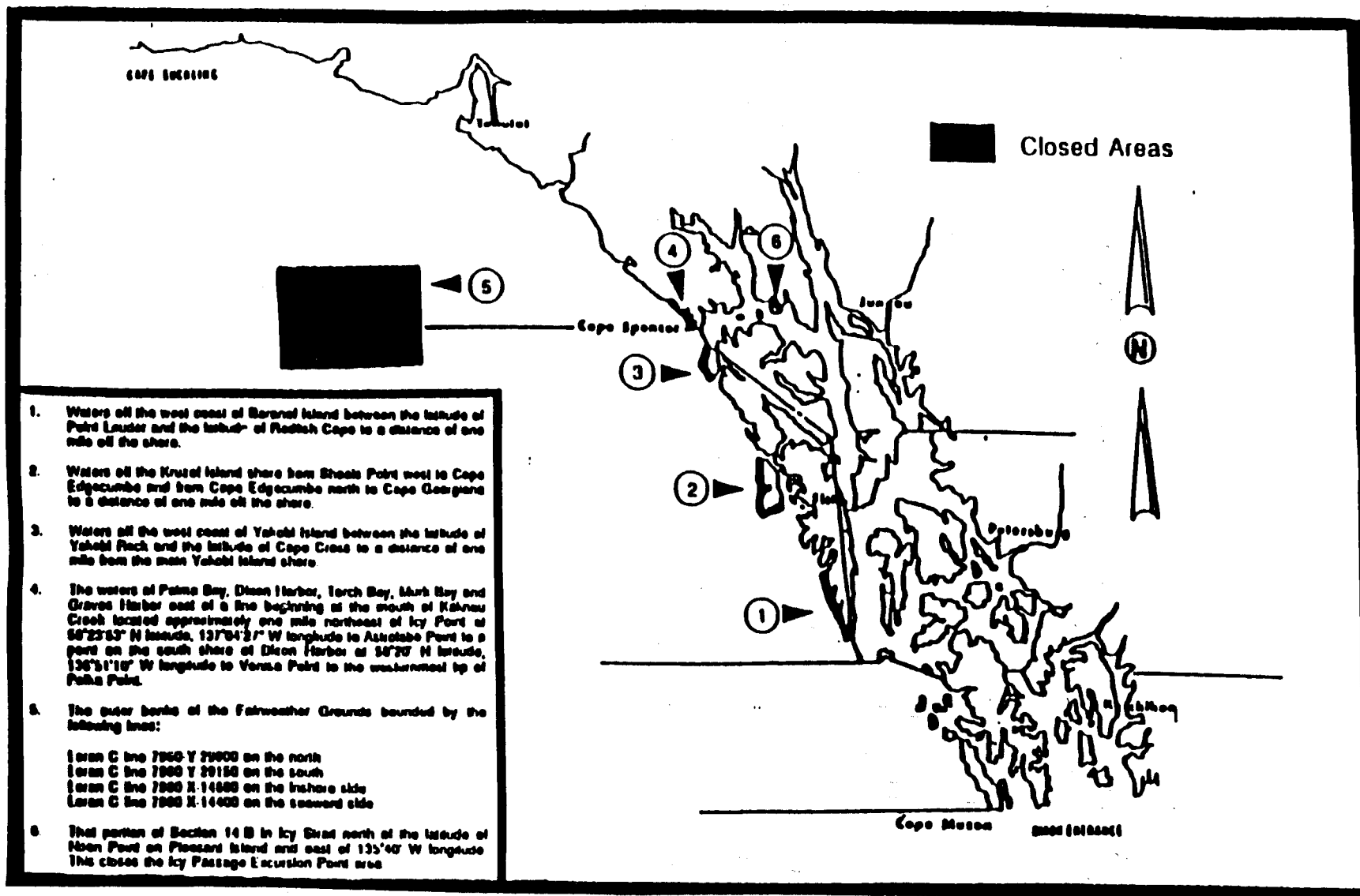


Figure 8. Southeast Alaska areas closed to trolling for all species during chinook non-retention periods of the 1993 summer troll season.

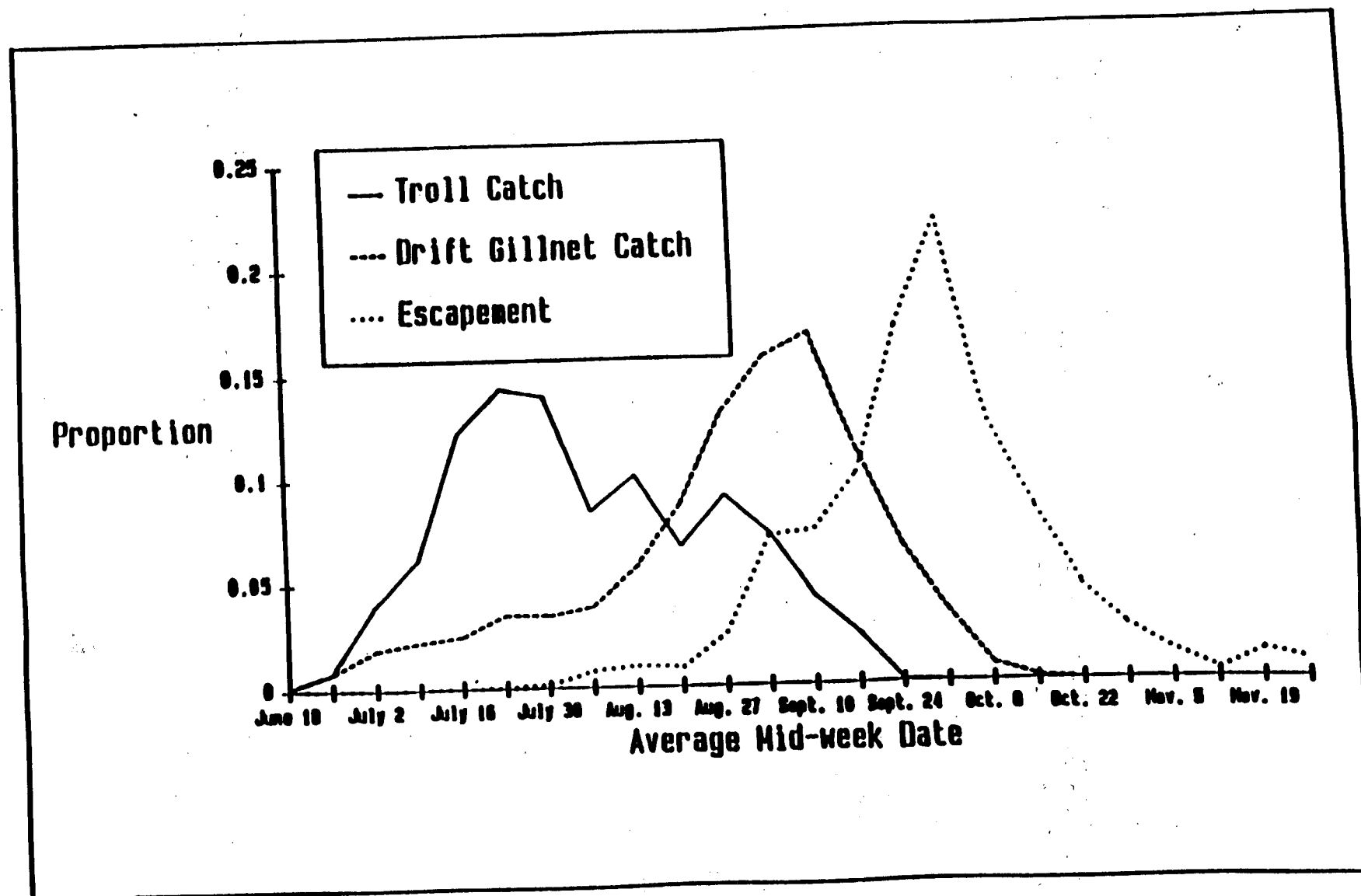


Figure 9. Average timing distribution of coho salmon in the Southeast Alaska troll and drift gillnet fisheries and at selected weir sites, 1982-1985.

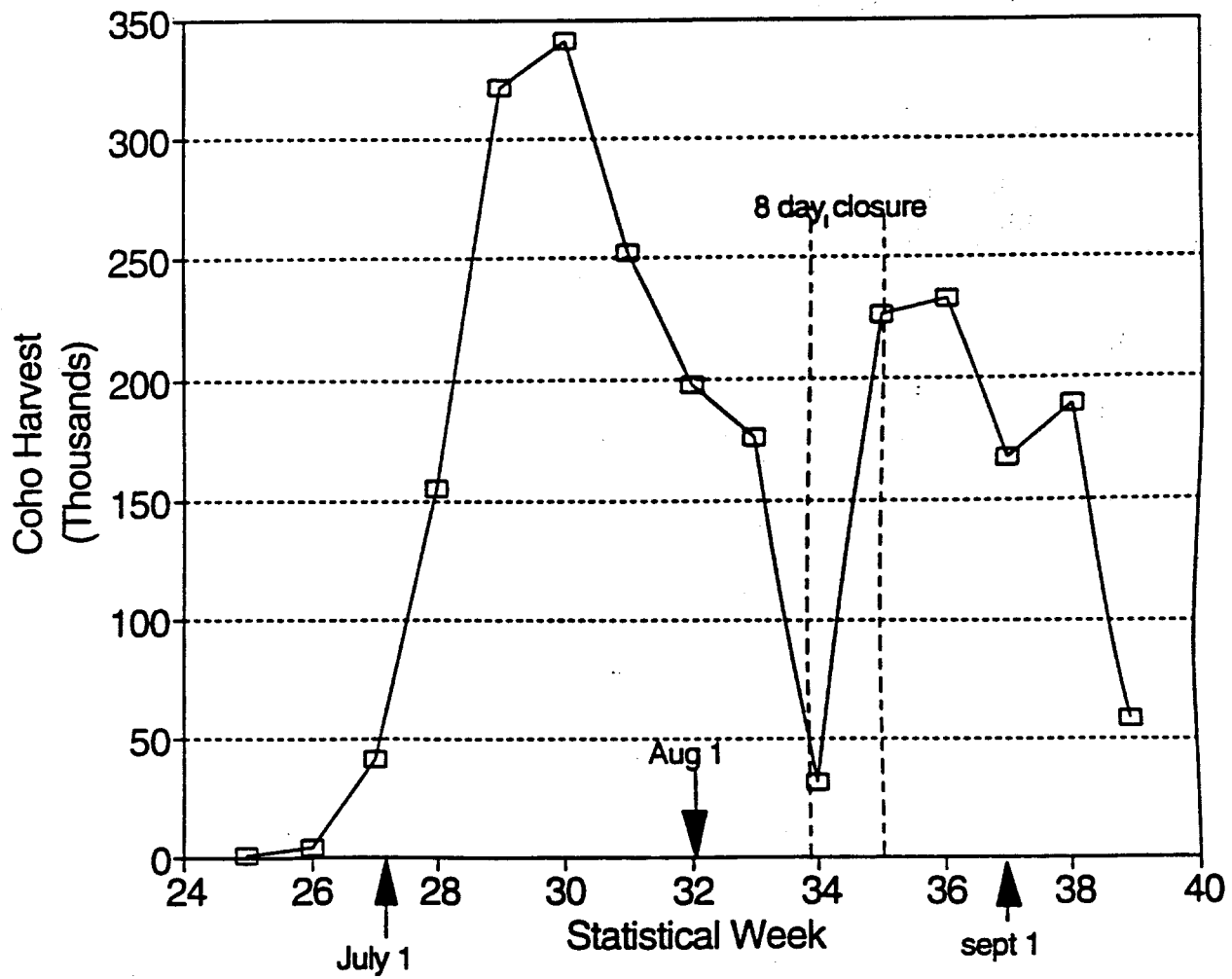


Figure 10. Southeast Alaska troll fishery coho catch by week, 1993.

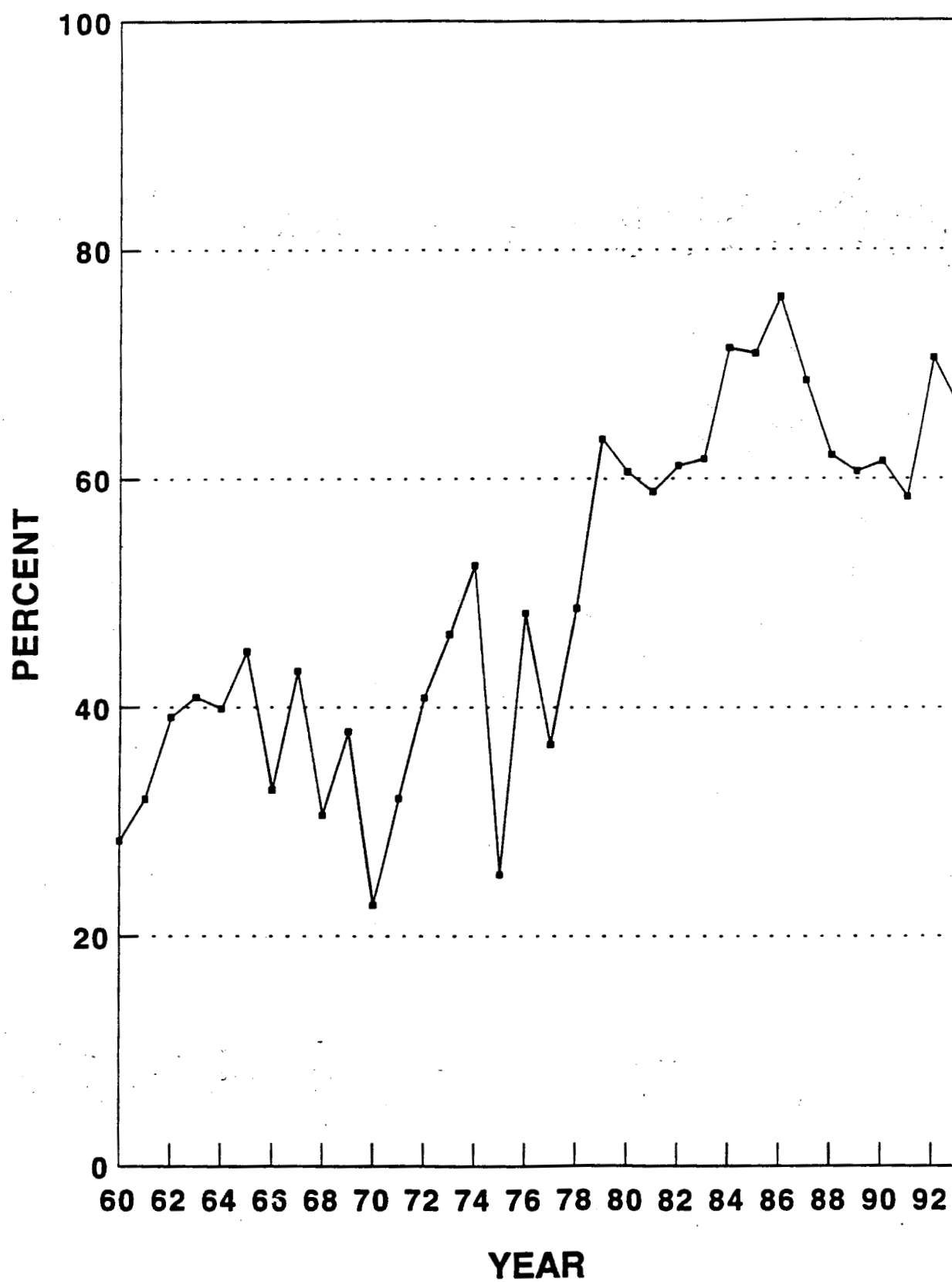


Figure 11. Percent of the total Southeast Alaska troll coho salmon catch harvested in outside districts, 1960-1993.

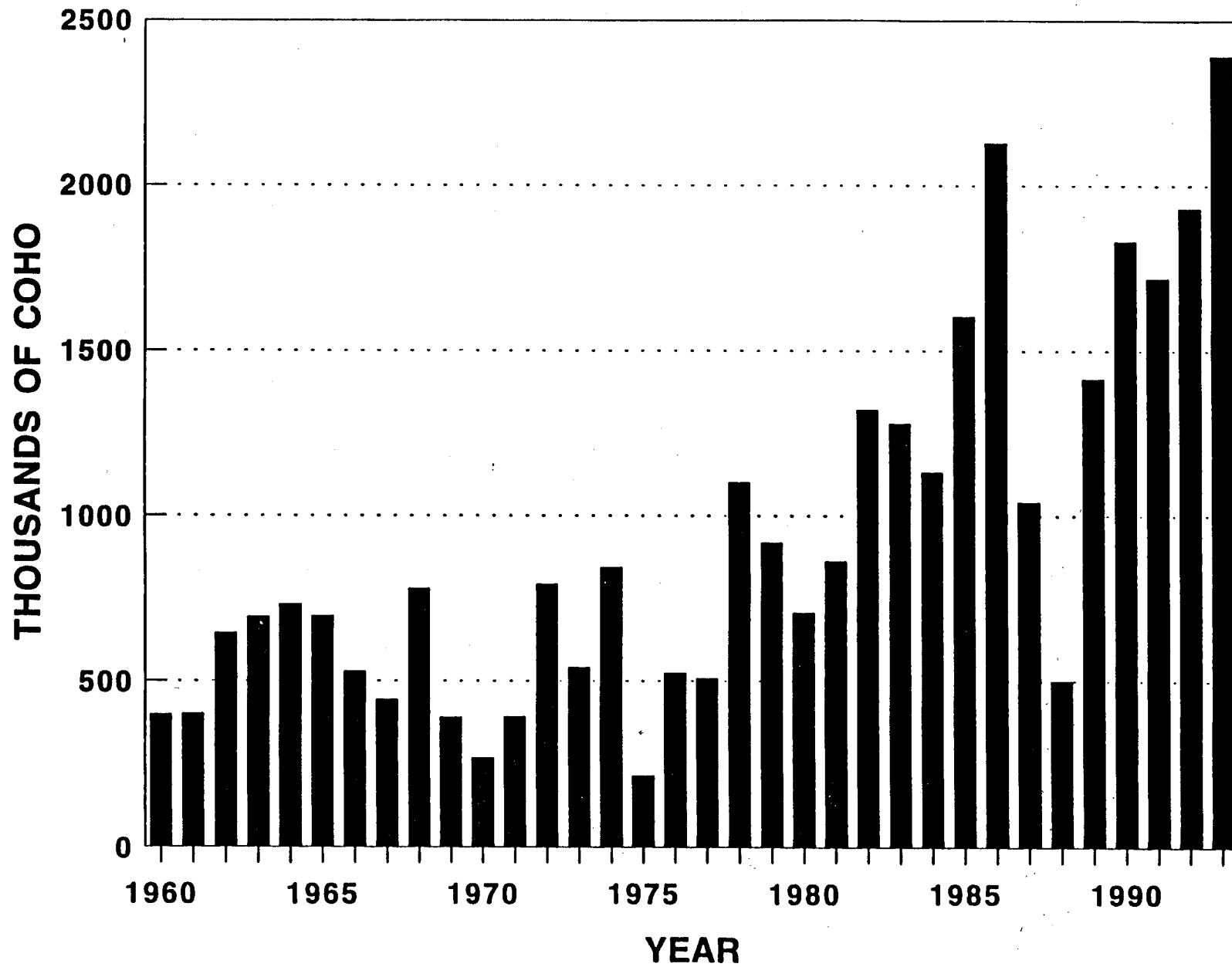


Figure 12. Southeast Alaska troll fishery coho salmon catches, 1960-1993.

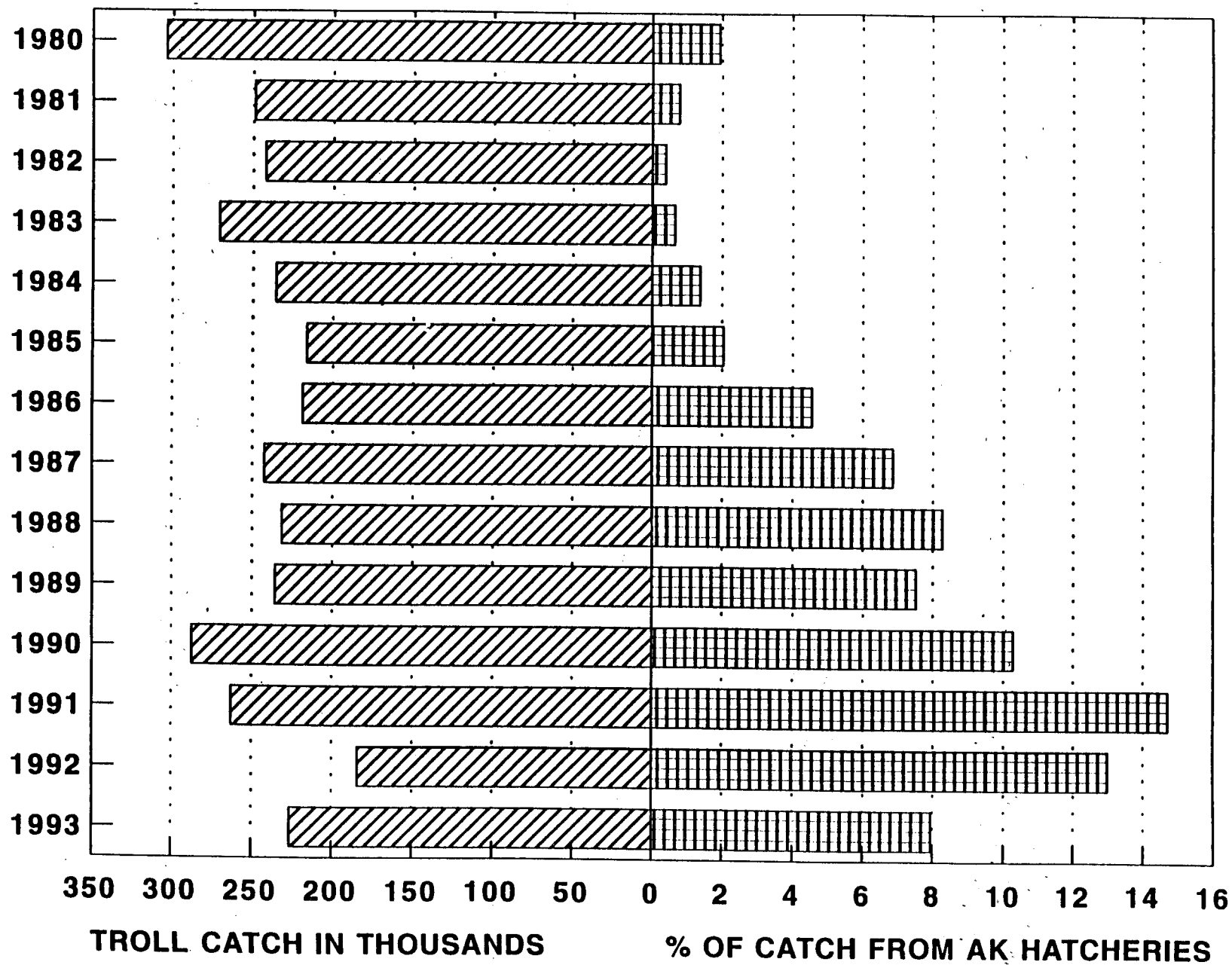


Figure 13. Alaska hatchery chinook contributions to the troll fishery, 1980-1993.

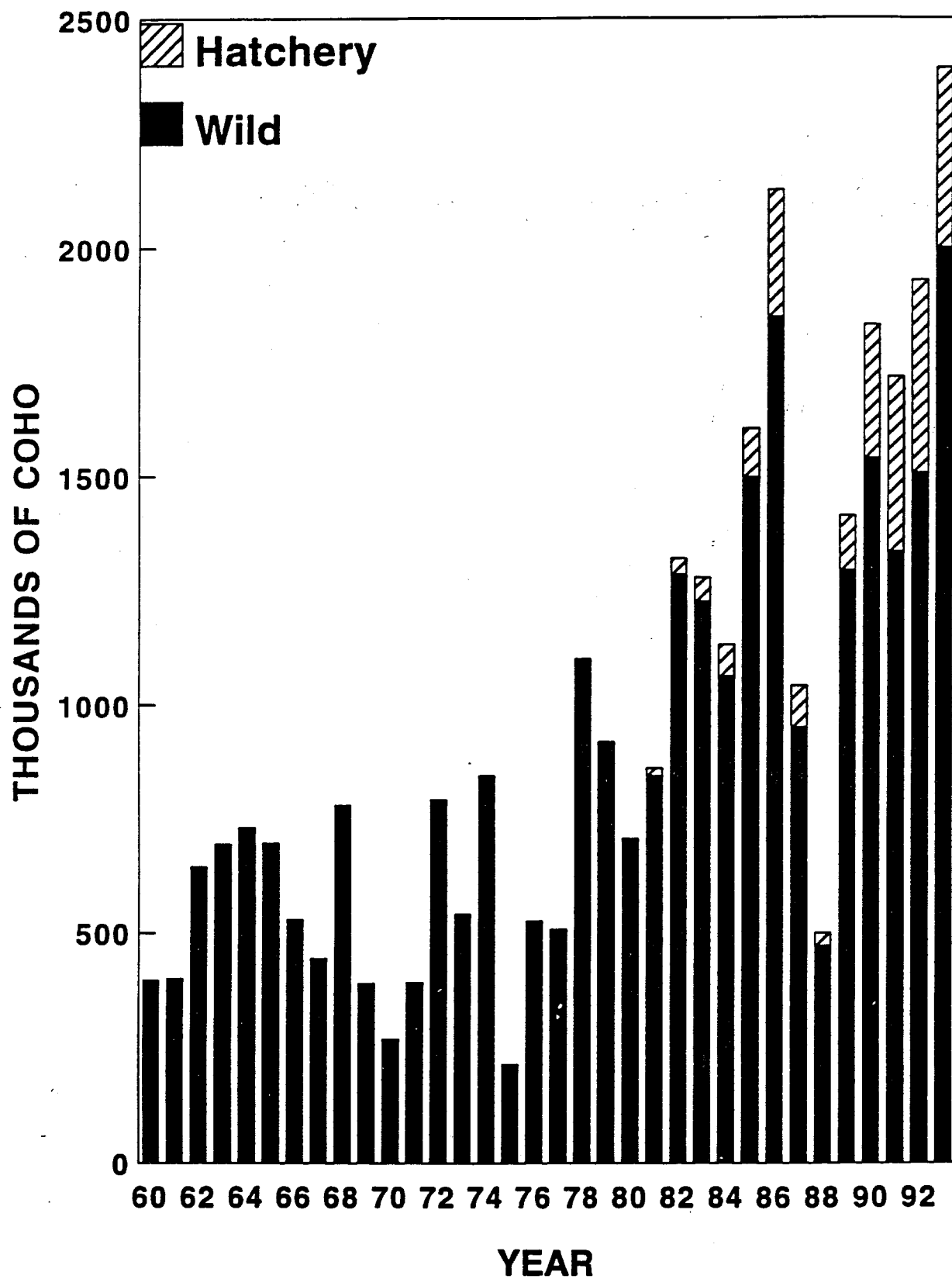


Figure 14. Total hatchery coho contributions to the troll fishery, 1980-1993.

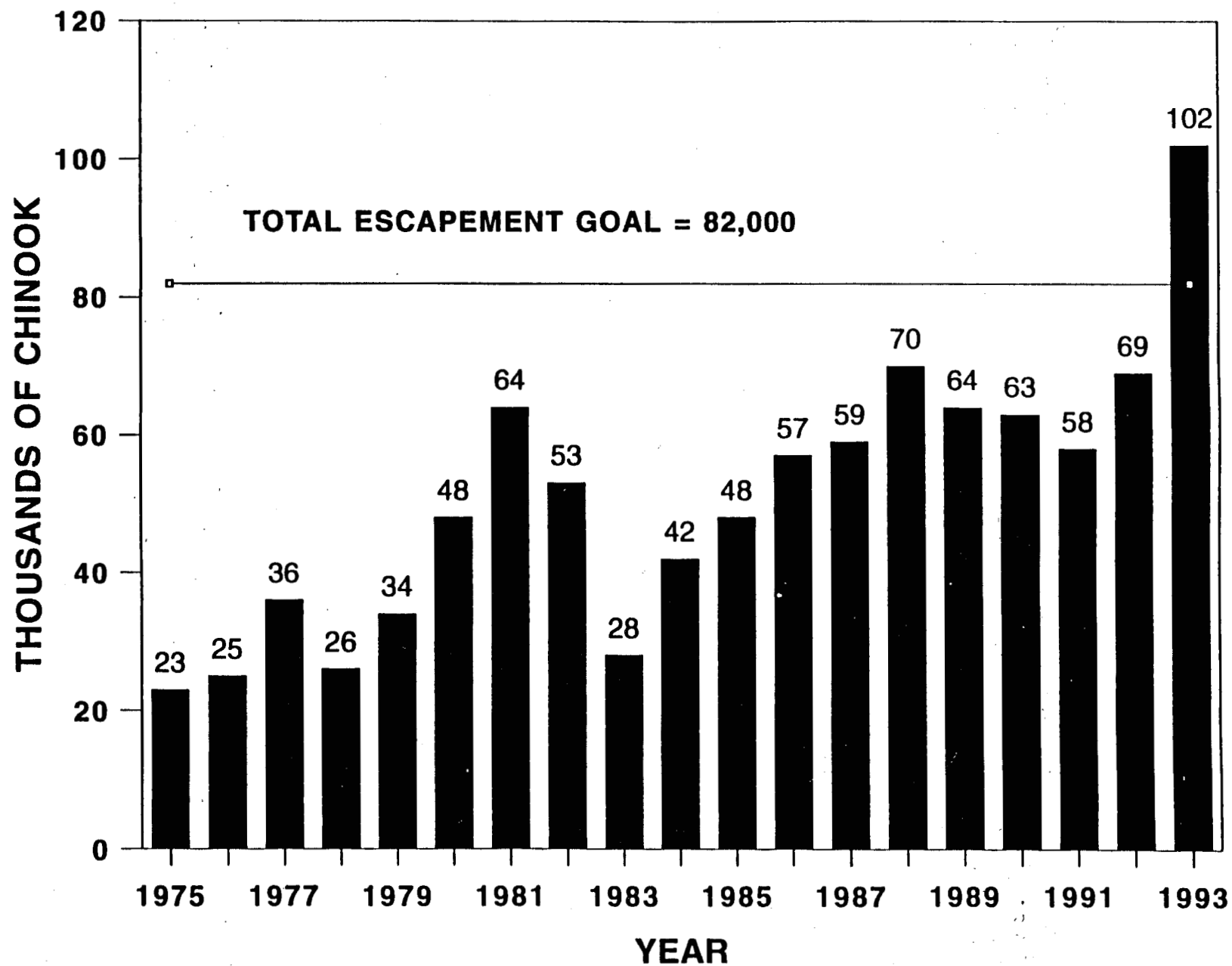


Figure 15. Estimated total natural chinook salmon escapements to Southeast Alaska and transboundary rivers, age 1.3 or older, 1975-1993.

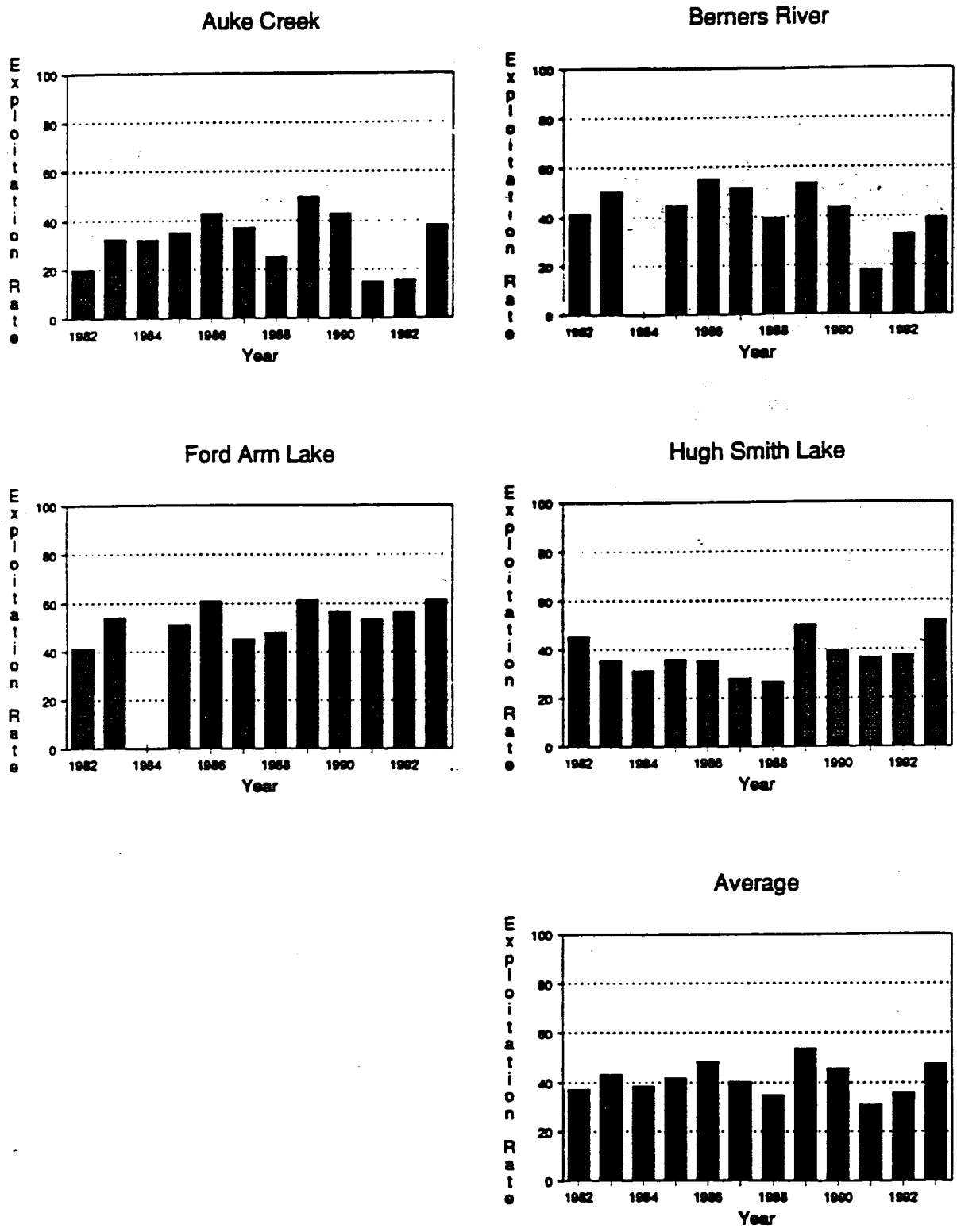


Figure 16. Estimated exploitation rates for four coded wire tagged wild Southeast Alaska coho salmon stocks by the Alaska troll fishery, 1982-1993.

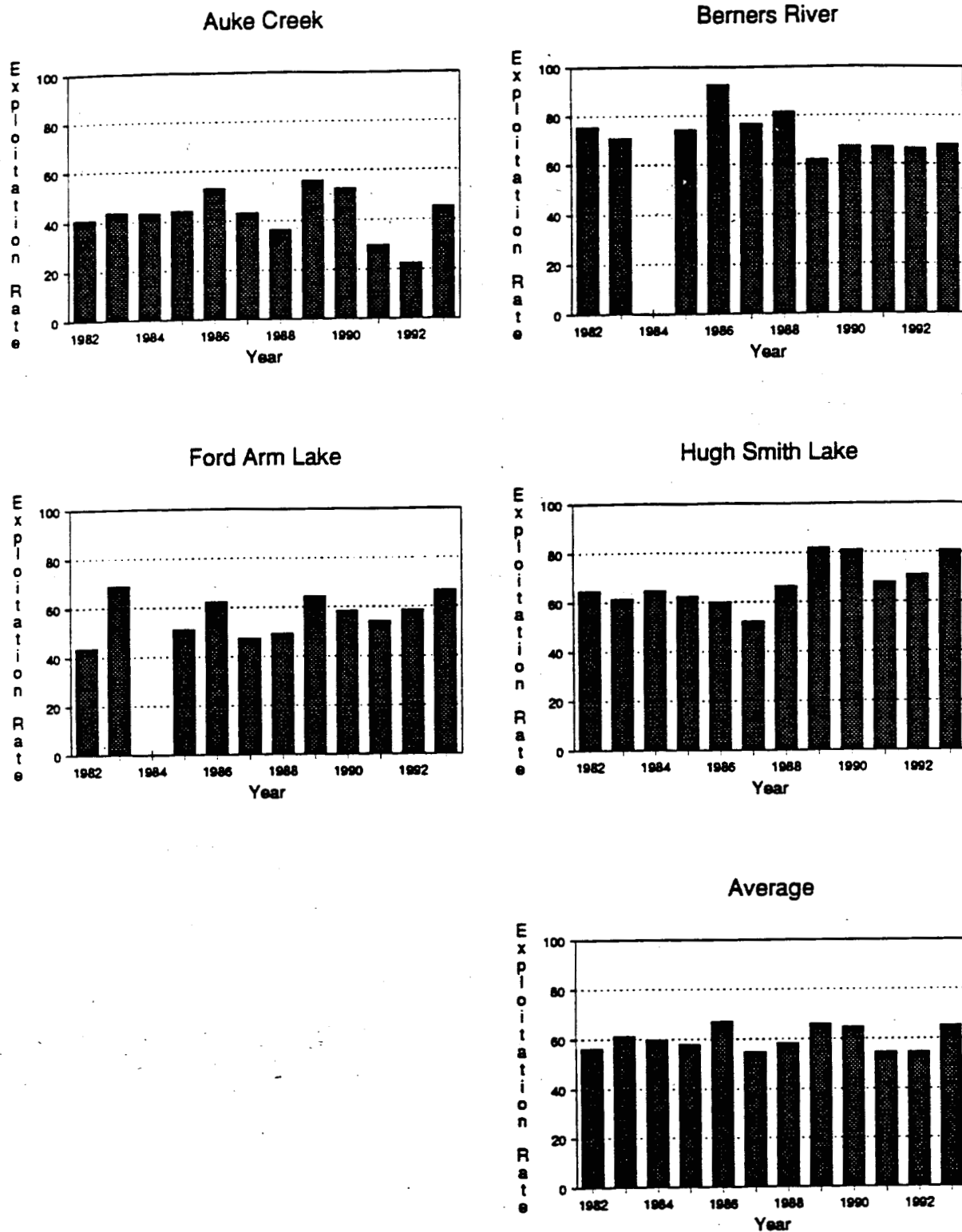


Figure 17. Estimated total exploitation rates for four coded-wire-tagged wild Southeast Alaska coho salmon stocks by all fisheries, 1982-1993.

REPORT TO THE BOARD OF FISHERIES
SOUTHEAST ALASKA-YAKUTAT SALMON SET GILLNET FISHERIES, 1993



By

Keith Weiland

**Alaska Department of Fish and Game
Commercial Fisheries Management and Development Division
Juneau, Alaska**

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ABSTRACT

The 1993 Yakutat set gillnet fishery produced a cumulative catch of 598,800 salmon which was the second highest catch since 1941. It was worth about \$3,000,000 to the 158 permit holders that fished. The catch included 346,000 sockeye, 237,500 coho, 1,300 chinook, 4,000 chum, and 9,900 pink salmon. Sockeye harvests ranged from above average in the Yakutat Bay, Situk-Ahmklin Inlet, Dangerous and East Rivers, to average in the Alsek and Lost Rivers, to below average in the Akwe River and Manby Shore fisheries. The harvest of 346,000 sockeye was the highest since 1938 and made up 58% of the total salmon harvest in the Yakutat area. It was 128% above the 1960 to 1992 average. The East River catch of 189,200 was a new record, and three times the average. The Situk-Ahmklin catch of 104,000 was the fourth highest since 1960. Together these fisheries accounted for 85% of the area's sockeye harvest. Coho salmon harvests ranged from above average in the Tsiu River, Yakutat Bay, Situk-Ahmklin Inlet, Lost and Dangerous Rivers, to average in the Italio and East Rivers, to below average in the Manby Shore fisheries, Alsek, Akwe and Kaliakh Rivers. The total coho harvest of 237,500 was the second highest since 1941 and made up 40% of the area's total salmon harvest. The coho harvest was twice the average harvest from 1960 to 1992. The Situk-Ahmklin fishery was the top producer with a catch of 136,900 coho; its highest harvest since 1954. The other top producer, the Tsiu River fishery, harvested 56,700 fish which was its fourth highest catch ever. These fisheries accounted for 82% of the area's coho harvest. The chinook salmon harvest was 27% below the 1960 to 1992 average and was effected by conservation measures in the Situk-Ahmklin Inlet, and the Alsek River. The Situk-Ahmklin catch of 790 was 30% above the average since 1960, but fish were legal to sell for only two of the eight weeks of the return. The Alsek catch of 300 was 65% below the 1960 to 1992 average. The pink salmon harvest of 9,900, and the chum salmon harvest of 4,100 were well below average. Most of the pink salmon (8,800 fish) were caught in the Situk-Ahmklin fishery incidental to the sockeye harvest. The East River contribution of 3,400 chum salmon accounted for 84% of the Yakutat area chum harvest.

INTRODUCTION

The Yakutat area (Area D) encompasses the Alaska Panhandle south of Cape Suckling and north of Cape Fairweather and accounts for over 200 miles of coastline (Figure 1). The area is divided into two districts, the Yakataga District west of Icy Cape and the Yakutat District east of Icy Cape. Commercial fishing occurs in the various rivers along the Yakutat forelands and in the adjoining ocean waters. Salmon are commercially harvested in the Yakutat area by set gillnets and troll gear. A separate Board of Fisheries Report is prepared for the Yakutat-Southeast Alaska troll fisheries. This report will concentrate on the set gillnet fishery.

Yakutat set gillnet fisheries target primarily on sockeye salmon during the summer and coho salmon during the fall. The set gillnet landings of chinook, pink, and chum salmon are primarily incidental while fishing for the major target species. A directed fishery for pink salmon does occur in portions of Yakutat Bay, and most of the chum salmon are taken from the East River during the fall.

Commercial fishing began in 1902 in the Yakutat area and was virtually unregulated until 1927. The area is presently producing below historically high levels, but current production is on an upward trend. The total set net catch in recent years (since 1979) has ranged from 263,800 (1986) to 632,300 (1992) fish, and the exvessel value has ranged from \$1,000,000 to \$9,000,000 to the 173 Yakutat setnet permit holders. The recent 10-year average exvessel value is approximately \$4,000,000.

The Yakutat setnet permits are not site specific and setnetters are free to fish any open area, although not more than one may be fished at a time. There are no formal forecasts for the Yakutat area salmon stocks. Preseason expectations are based on known, or estimated, parent-year spawning escapements and commercial catches, local observations of rearing conditions, and in some cases, the strength of certain year classes. Opening dates and weekly fishing periods are specified by regulation for the various set gillnet fisheries. However, these are altered by emergency order, as needed, based on parent-year information and inseason management of each river's fishery. The inseason management is affected by catch per unit effort (CPUE) analysis of the commercial catch and, where possible, salmon escapement rates. The 1993 return of sockeye salmon was expected to be average to below average for most systems. Returns of coho were expected to be above average. The 1993 set gillnet season extended from June 14 through October 8 (Table 1). During the 1993 season, the southeast half of Yakutat Bay, the southeast half of the Situk-Ahmklin Inlet, the Alsek River and the Dangerous River, opened on June 14. Other areas opened in late June.

The 1993 total setnet harvest of about 598,800 salmon was the second highest since 1941. The 1993 catch was 58% sockeye and 40% coho salmon. The catch was valued at about \$3,000,000 for the 158 active permit holders. Annual salmon landings in the major Yakutat setnet fisheries are listed in Tables 2-16.

SOCKEYE SALMON FISHERY

Sockeye salmon are the main target species in the Yakutat District. The total 1993 catch of approximately 346,000 fish was 128% above the average since 1960 (Table 2). It was the highest harvest for the area since 1938 and was mostly a result of strong returns to the East River and Situk-Ahrnklin Inlet, which together accounted for 85% of the total sockeye catch (Table 3). It was the fourth highest sockeye harvest in the Situk-Ahrnklin Inlet since 1960 and a record sockeye harvest for the East River. The Yakutat Bay harvest of 19,200 was 40% above the average since 1960. The Dangerous River harvest was twice the average since 1960. Sockeye catches in other areas were average to below average. The Italio River was not open to sockeye fishing for the sixth year in a row.

Alsek River

The Alsek River, a transboundary river emanating from Canada, is located about 40 miles southeast of Yakutat. The Alaskan fishery occurs throughout the lower 14 miles of the river including Dry Bay (a large braided channel area near the river mouth), and in an adjacent surf and ocean fishing area.

The Klukshu River is the primary index system for sockeye and chinook salmon in the Alsek River drainage. Salmon escapement counts from the Klukshu River Weir (operated by the Canadian government) serve as an escapement index for the Alsek River system. An estimated 37% or 60% of the sockeye and 64% of the chinook spawn in this tributary. The Klukshu River chinook escapement goal is 4,700 fish. No official goal for sockeye has been established; however, United States managers believe that the optimal escapement to the Klukshu River is 15,000 to 20,000 sockeye salmon. The interim escapement goal for Alsek sockeye, set by the Transboundary Technical Committee, is 33,000 to 58,000 fish. Using the 37% to 60% contribution range, the estimated 1993 sockeye escapement in the Alsek River was on the order of 26,000 to 43,000.

Although no Alsek River salmon sharing agreement is in place with Canada, the rebuilding of these runs requires joint conservation efforts. Canadian sport and subsistence fisheries harvest both chinook and sockeye salmon. Canadian subsistence fishing has been restricted in recent years prior to mid-August to conserve chinook and early run sockeye, and the Canadian subsistence harvest on sockeye has been reduced in recent years. Sport fishing is restricted in the Dalton Post area to a 3.25 day weekly fishing period from June 1 through September 4, and the Klukshu River is closed to sport fishing from the lake to 1 kilometer downstream of the Haines Highway culvert. In recent years, sockeye non-retention was in effect until August 15. The current salmon bag limits are five per day, ten in possession, of which no more than one chinook per day, two in possession may be included in this limit. In 1993, the combined subsistence and sport harvest of sockeye and chinook salmon was 1,800 sockeye and 320 chinook. The sockeye harvest was 9% below the 1983 to 1992 average. The chinook harvest was 24% below the 1983 to 1992 average.

Alsek River fisheries management in Alaska is based on parent-year escapement, inseason catch, and abundance modeling. Preseason expectations are derived from parent-year escapement levels. A harvest rate model and a regression model are used to predict the total Dry Bay sockeye catch and the index run size (Dry Bay catch + Klukshu Weir count). During the last several years, both models have tended to overestimate the index run size, but have become more accurate late in the season. The harvest rate model's final estimate exceeded the actual run size by about 15%, and the regression model's estimate exceeded it by about 8%.

The 1993 Alsek River season opening on June 14 was a delay of one week from the date specified by regulation as the first Monday of June. Delaying the opening was a conservation measure for Klukshu chinook and Klukshu early run sockeye salmon. Both the early and late sockeye runs were not expected to be strong based on a parent-year (1988) Klukshu Weir count of 580 early and 8,700 late run fish, and fishing periods were expected to be limited in 1993.

Alsek River fishing time started at one day per week but was extended to two days during the second week of fishing (Table 1). By the end of the second week it was apparent that the early run of sockeye salmon was strong and three days of fishing were allowed during the third week. Because of the expectation for an overall poor run of sockeye salmon, fishing was reduced to two days per week for the next two weeks. Fishing was increased to three days during the third and fourth weeks in July due to continued high abundance model predictions and above average fishing success. With continued high abundance model predictions and a decrease in effort because of the East River sockeye run, the Alsek was extended to four days for the final week of the sockeye season.

The total 1993 Alsek River sockeye salmon harvest of 20,000 was slightly below the average catch of 21,200 recorded since 1960 (Table 4). The Klukshu Weir count of approximately 16,700 fish was 10% below the 1983 to 1992 average. A total of 1,000 sockeye salmon was taken above the weir in a Canadian Indian food fishery, thereby decreasing the escapement to 15,700. This escapement was over twice the 1988 parent year level of 7,700 but 6% below the 1983 to 1992 average of 16,800. The escapement of early run sockeye, which migrate through the weir by August 15, was 5,400, 67% above the 1983 to 1992 average. The escapement of late run sockeye, however, was 26% below the 1983 to 1992 average. Escapement surveys of U.S. tributaries were mixed, ranging from below average in the Tanis River to well above average in Basin Creek where a peak count of 4,800 was observed.

The Alsek River surf and ocean fishing area was opened during the same periods as the inriver fishery as per regulation. The surf and ocean fishing area includes the shoreline 3/4 mile in each direction from the river mouth out to the outermost bar where the surf breaks. The surf area was fished during the first two weeks and the fourth week of the season. A total of eight chinook and approximately 750 sockeye were harvested in the surf fishery.

East River

The East River fishery is located about 4 miles east of the Alsek River. The river emanates from upwelling springs on the Dry Bay forelands and does not extend into Canada. It is joined four miles from its mouth by the Doame River. The Doame River contributes primarily coho salmon and some early run sockeye. The East River fishery occurs in adjacent ocean waters and at the river mouth in the lower two miles of the river. The East River sockeye stock is the latest returning to the Yakutat area. It peaks in early to mid-August when other area returns are ending. Most fishers working this river also participate in other Yakutat area setnet fisheries.

By regulation, the East River fishery opened on the fourth Monday of June. The initial opening on June 27 was for a 1-day weekly fishing period. Fishing time stayed at one day for the next week. Time was increased to two days during the second week of July. Escapement built steadily and the weekly fishing periods were increased to three, four and five days until the fishery was left open from August 23 through September 3 (Table 1). A peak count of 84 setnetters, or 53% of the active setnet permits in the Yakutat area, fished the East River during the second week of August. A record 66,500 fish were caught during this week. The effort was 17% above the recent 10-year average of 72. The total 1993 East River harvest of 189,200 fish was a new record and three times the average (Table 5). Escapement was good, with a peak aerial count of 45,000.

The East River surf and ocean fishing areas were open during the same periods as the inriver fishery. Effort in the surf and ocean areas has increased over previous years. The surf area was fished for the first 11 weeks of the 1993 season beginning in late June and extending through early September. The surf fishery accounted for 40% of the total 1993 East River sockeye catch. Peak effort in the surf was 39 nets during the second week of August. The ocean area was fished for four weeks during the season from mid-July to mid-August, and accounted for less than 24% of the total East River catch. Peak effort in the ocean was 30 nets during the first and second weeks of August.

A new regulation banning the use of pulley systems within 100 yards of the mouth of the East River at mean low tide was enforced for the third year in a row. Like 1992, no markers were placed to delineate this area, but fishers were aware of the regulation and no pulley systems were observed inside this area. The majority of the sets in the surf area were made up of pulley systems.

Yakutat Bay

Two separate sockeye salmon fisheries occur in Yakutat Bay. The Manby Shore fishery, north of 59°41' N. latitude, takes place along the northwest shore eastward of Pt. Manby, and the Yakutat Bay fishery, south of 59°41' N. latitude, occurs along the southeast shore in and around Monti Bay. Both fisheries are mixed stock fisheries supported primarily by fish bound for the Yakutat foreland systems south of Yakutat Bay. Early catches in Yakutat Bay are predominantly Situk River sockeye, while later catches may be

mostly East River fish. The Manby Shore fishery is relatively new, while the fishery in Monti Bay has a long history.

The Monti Bay fishery opened on Monday June 14 per regulation. Fishing was slow but fishing time was extended because of the strength of the Situk return (Table 1). The Situk sockeye run developed well and Yakutat Bay fishing time was increased to the maximum of 4.5 days per week for the next two weeks. A ceiling of 4.5 days has been placed on both Yakutat Bay fisheries due to the mixed stock nature of these fisheries. The Yakutat Bay catch of 19,200 fish was almost twice the 1960 to 1992 average (Table 6). Effort remained fairly steady and averaged 19 units for the first seven weeks of the season. Effort and catch has been well above average in each of the last five years.

The Manby Shore Ocean fishery opened on June 21 per regulation. An average of five units fished this area during the first three weeks of the season. Peak effort during the season was six setnetters. Fishing time was dependent on the strength of the Situk River return. With a good abundance of Situk River sockeye, extended fishing periods were allowed up to the maximum. The Manby Shore Ocean fishery harvested about 3,600 sockeye, which is about 75% below the recent 5-year average.

The Manby Shore instream fisheries opened on June 28 per regulation, but inshore waters were not fished until July 26. Inshore effort was very light and most setnet fishers stayed closer to Yakutat. The total combined 1993 Manby Shore catch of 3,900 sockeye was 37% below the average (Table 7). The outside fishery took 94% of the total.

Situk-Ahrnklin Inlet

The Situk-Ahrnklin Inlet fishery, located seven miles from Yakutat by road, is historically the largest and most heavily fished in the Yakutat area. Fishing occurs in the large Situk-Ahrnklin estuary approximately four miles in length, and in the ocean within a 1/2 mile radius of the river's mouth. A weir on the lower Situk River helps management determine escapement levels throughout the sockeye season. The present Situk River sockeye escapement goal is 40,000 to 55,000 fish. The Situk-Ahrnklin fishery was opened by emergency order on June 14, one week earlier than by regulation. This initial one day opening was confined to the Ahrnklin River end of the estuary. Regulatory markers were placed in both Divide Slough and the estuary, approximately two miles east of the western tip of Blacksand Island, delineating the area open to fishing. The confinement of the fishery to the southeastern half of the inlet during this first opening was to minimize interception of emigrant Situk steelhead and immigrant Situk chinook salmon, while providing some harvest opportunities on surplus Ahrnklin sockeye. During this 1-day opening, approximately 2,500 sockeye were harvested; no steelhead or chinook were reported.

The entire Situk-Ahrnklin estuary opened to commercial fishing on June 21. Fishing time was extended to 4.5 days for the first week of the season and 5.5 days for the next four weeks. Catch and escapement remained good through this period. Catch and escapement dropped off and the fishery was cut back to 4.5 days the following week.

The Situk River weir was removed on August 5 with a final count of 61,200 sockeye. The upper escapement range limit was exceeded by approximately 6,200.

The total Situk-Ahrnklin catch of 104,000 sockeye was the fourth highest since 1960 (Table 8). Effort was above average, with a peak count of 78 fishers (49% of the active permits) during the second week of July. During the nine weeks of the sockeye season, the Situk-Ahrnklin fishery averaged 58 setnetters per week.

For the sixth straight year, the Situk Weir was placed within the lower two miles of the river. Placing the weir there makes it more useful for inseason management than the old 9-mile site, which required surveying the river below the weir. Daily escapement information, when coupled with weekly catch data, proves extremely valuable in managing the fishery.

In 1993, the Situk River sockeye escapement goal was only slightly exceeded. This was the first year since 1988 that the fishery did not stay open for continuous fishing. The total return of about 186,800 fish, which included estimated portions of the Yakutat Bay, Lost River, Manby Shore Ocean, and subsistence catches, came primarily from the 1988 escapement of 46,700 and yielded a return-per-spawner (R/S) of approximately 4:1. In the last three years, the returns-per-spawner have been considerably better than the Situk's 10-year average of 1.9:1.

Lost River

The Lost River fishery, located only two miles to the west of Situk-Ahrnklin Inlet, harvests some Situk-Ahrnklin stocks as well as resident stocks. In the last four years, weekly fishing periods for the Lost River were extended when periods for the Situk-Ahrnklin fishery were extended. Consequently, for the last four years, the Lost River catches have been above the recent 10-year average.

By regulation, the Lost River was opened on June 21. The initial opening was 2.5 days. As time was added to the Situk-Ahrnklin fishing periods, time was also added to the Lost, and the river was open to 4.5 days for the second, third, and fourth weeks of the season (Table 1). Fishing time was then reduced to assist the Lost River escapement. Timely documentation of escapement has proven difficult and management has had to rely more on fishery performance data. The total Lost River catch of 4,000 sockeye salmon was only 5% below the average catch of 4,200 recorded since 1960 (Table 9). A peak escapement count of 375 sockeye, recorded on August 9, was well below average.

Italo River

The Italo River is located about 15 miles east of the Situk River and is not connected to Yakutat by road. In December 1986, during heavy rains and stormy weather, the Italo River diverted its course. At a point

approximately three miles above its mouth, it changed direction and flowed east to join the Akwe River near its mouth. Since that time, the open fishing areas on both rivers have been limited to areas above the confluence to ensure more stock-specific management. On this "New" Italo River, the open area has been established by emergency order with markers placed 1/4 mile upstream from the new river confluence. Open areas on two other distinct river channels - the "Old" Italo and the "Middle" Italo - are also established by emergency order with markers. Only the New Italo River has a sockeye run.

The New Italo River fishery opens by emergency order when sockeye salmon escapements are building adequately. During the 1993, as for the past five years, the fishery remained closed throughout the run. Though escapements were the best seen in recent years, they were still below the pre-1987 average of about 8,200 fish. The peak count of 1,500 sockeye in the river and 3,200 in Italo Lake was the highest escapement count since 1987. This year's peak escapement count was encouraging and the prospect of reopening this fishery in the future is promising. Historical Italo River harvests are listed in Table 11.

Akwe River

The Akwe River is located between the Italo and Alsek Rivers. It supports a small sockeye fishery. As described in the previous section, the change of course of the Italo River into the Akwe River created a need to change the open fishing area on the two rivers. To reduce fishing on mixed stocks, the Akwe River was closed downstream of a point 1/2 mile above the new confluence. A fishing area of about three miles in length is thus allowed on the Akwe River.

The Akwe River opened on June 28 per regulation. Though the fishing effort was light and less than half the average, catches and CPUE were below average and fishing periods remained on reduced time until the third week of the sockeye season (Table 1). Effort peaked at four setnetters during the first week of the season. This was the lowest number of fishers in the past 10 years, and one-third the average.

The 1993 harvest marked the fourth year in a row of poor sockeye production for the Akwe River. The sockeye harvest of 4,000 fish was 40% below the 1960 to 1992 average (Table 12). Sockeye escapement surveys are hampered by glacial water and brush growing over the clear water tributaries. Aerial surveys in recent years have been of little value because of these conditions; however, because of the summer's drought, aerial visibility improved considerably over recent years. A peak aerial count of 800 fish was taken on July 16. A foot survey was conducted on August 28 and 3,800 sockeye were observed in main spawning tributary near the outlet of Akwe Lake.

Yakataga District

Except for the Tsiu River and an area between Cape Yakataga and Icy Cape, the Yakataga District opened on Wednesday, June 16 for an exploratory fishery for sockeye salmon. As in the past four years, the area was open from Wednesday to Friday of each week during the entire season (Table 1). No one fished the area for sockeye during the 1993 season.

PINK AND CHUM SALMON FISHERY

Humpback Creek, located in Yakutat Bay, supports the only directed pink salmon fishery in the Yakutat area. Pink salmon harvested in other rivers are incidentally taken during the sockeye fishery. Pink salmon production in the Yakutat area was well below average in 1993. The peak escapement count at Humpback Creek was 13,000 fish, 30% above the escapement goal of 10,000. Approximately 16,300 pinks were counted through the Situk Weir before it was removed on August 5. The total 1993 pink salmon harvest of 9,900 fish was 77% below the 1960 to 1992 average (Table 2). About 88% of the total harvest came from the Situk-Ahrnklin Inlet. No harvest was reported from the Humpback Creek area of Yakutat Bay (Table 13).

Chum salmon production is minimal in the Yakutat area, with the East River accounting for most of the harvest. The total 1993 Yakutat setnet harvest of 4,000 was 58% below average. The East River catch of 3,400 accounted for 84% of the total Yakutat set gillnet harvest (Table 3). East River chum salmon are primarily harvested in the fall along with coho salmon.

COHO SALMON FISHERY

Coho salmon are harvested in the same rivers of the Yakutat District (Cape Fairweather to Icy Cape) that support sockeye salmon fisheries. Coho salmon are the primary commercial species on the Yakataga District (Icy Cape to Cape Suckling). The department shifts to coho salmon management in mid-August when they begin entering Yakutat area streams. The total Yakutat area coho catch has increased steadily over the past decade. The 1993 catch of 237,500 was the second highest harvest for the area since 1941. This year's harvest was a little over twice the 1960 to 1992 average, and 40% of the total Yakutat set gillnet salmon harvest (Table 3). The Situk-Ahrnklin Inlet and Tsiu River fisheries were the main producers, accounting for 82% of the area's coho harvest.

Yakataga District

The main coho fisheries in the Yakataga District are those in the Tsiu and Kaliakh Rivers. The Tsiu River fishery opens by emergency order when escapements in the Tsiu-Tsivat Lagoon are building adequately. In 1993 the Tsiu River opened on August 23, while the remainder of the district, including the Kaliakh River, was opened earlier for the exploratory sockeye fishery (Table 1). The total coho catch for the Yakataga District was about 65,600 fish, 28% of the total Yakutat area coho harvest (Table 3). This harvest was about 9% above the recent 10-year average for the District.

The Tsiu River coho harvest of 56,700 fish accounted for 86% of the total Yakataga District's coho catch. The Tsiu River is a small, clear river just west of the Kaliakh River. The Tsiu was the major coho producer in the Yakutat area for 10 of the last 16 years. Fishing effort was 18% below average in 1993. A peak of 22 setnetters fished during the second week of September. Effort was fairly constant for the first six weeks of fishing. During the seventh week the effort dropped to 13 fishers. For most of the season, there were two buyers on the fishing grounds. Both staged their operations on the west side of the river where flooding was less likely to hamper moving the fish to town with DC-3 and C-46 aircraft. Escapement and catches were steady and extra fishing time was allowed throughout the season (Table 1). The total Tsiu River coho harvest of 56,700 fish was the fourth highest harvest on record and 77% above the average (Table 14). A peak escapement count on September 10 revealed 15,000 fish in the Tsiu and 3,500 fish in the Tsivat River, a tributary to the Tsiu Lagoon.

The Kaliakh River is much larger and more difficult to fish than the Tsiu River. During 1993, effort was 27% below average, and the total Kaliakh River catch of about 8,000 coho was 40% below the 1960 to 1992 average (Table 15). A peak of eight permit holders fished the Kaliakh River during the third week of September. Effort levels were affected by the lack of logistical support. No escapement surveys for the Kaliakh system were conducted in 1993.

The Tashalich and Kiklukh Rivers are two small streams west of the Tsiu River that are sometimes fished during the coho season. Neither river was fished this year, but Midtumber Creek was fished one week by one permit holder, therefore, all catch information is confidential.

Yakutat District

The Yakutat District coho harvest of approximately 172,000 fish was over twice the recent 10-year average. Coho harvests occurred from west to east in Jetty Creek, Yahtze, Yana, Manby Shore, Yakutat Bay, Lost, Situk-Ahmklin, Old Italio, Middle Italio, Akwe, Alsek, and East Rivers. Run strengths ranged from above average to below average. Fishing times were extended according to fisheries performance data and available escapement data. The Situk-Ahmklin Inlet was the area's most productive coho system. The year's catch of 136,900 coho on the Situk-Ahmklin Inlet accounted for 80% of the district's harvest. It was the highest coho harvest in the Situk-Ahmklin Inlet fishery since 1954, and four times the average

since 1960. Peak effort level on the Inlet was 73 fishers. Coho catches in Yakutat Bay, Lost River and Dangerous River were well above average. In most other rivers, coho catches were below average.

Except for the Alsek and New Italo Rivers, escapement surveys showed good numbers of coho spawners in most systems. A peak escapement count on the Situk River of 10,700 was the fourth highest count recorded since 1971.

CHINOOK SALMON HARVEST

No directed chinook salmon commercial setnet fishery occurs in the Yakutat area. The Alsek River is the only river that historically supported a directed chinook fishery but that stock is currently depressed. Chinook salmon harvested by setnets in the Yakutat area are taken incidentally during the early weeks of the sockeye fisheries. Mature spawners were harvested during the 1993 season in Yakutat Bay, in the Situk-Ahrnklin Inlet, and in the Alsek, East, Akwe, and Lost Rivers. The Yakutat Bay fishery harvests mature spawners destined for Yakutat area rivers, and feeders of unknown origins. The 1993 harvest of 1,310 chinook was 27% below average (Table 2). Most of the 800-fish harvest occurred in the Situk-Ahrnklin Inlet fishery.

A comprehensive management plan for Situk River chinook was implemented for the third year in a row in 1993. This plan mandated various chinook conservation measures based on an ascending scale of projected escapement through the Situk River Weir. A level of 750 large chinook through the weir had to be projected before commercial fishers would be allowed to retain and sell fish. A "non-sale" policy was implemented for the first week of the season. All Situk-Ahrnklin and Lost River fishers were asked to work their gear frequently and to release live chinook. Dead chinook could not be sold but could be kept for personal use, and were to be reported on fish tickets. A total of approximately 78 large (>28 inches) and 48 small (<28 inches) chinook were retained for personal use. Approximately 23% of the large chinook that passed through the weir were net-marked. This compares to 51% in 1989 and 48% in 1990, two years in which the non-sale policy was in effect for the entire season, and to 37% in 1991 when the policy was in effect for the first three weeks, and 11% in 1992 when the policy was in effect for only the first week. These data indicate some survival of netted and released fish.

The return of chinook was strong, and after the third week of June a total of more than 750 large chinook through the weir was projected. Beginning with the fourth week of June, setnetters were allowed to retain and sell chinook. After two weeks of an intense sport fishery above the weir where one chinook per day could be retained, it became necessary to implement the non-sale policy again. Chinook non-sale stayed in effect for the remainder of the run until August 16. The chinook harvest of 790 fish was 30% above the average for the years prior to the implementation of the non-sale policy in 1989 (Table 8). The final weir count was 4,160 chinook, of which 970 were large spawners, 490 were two ocean jacks, and 2,700 were one ocean jacks. Deducting a sport fishing mortality of approximately 200 large spawners above the weir left an escapement of 770.

The harvest of 300 Alsek River chinook salmon was 65% below the 1960 to 1992 average of 867 (Table 4). In 1993, the Alsek River opening was delayed one week from the date specified by regulation to conserve chinook and the early portion of the sockeye run. For the eighth year in a row, a maximum gillnet mesh size of six inches was implemented by emergency order during June to reduce the catch of chinook salmon. The Klukshu River Weir count of 3,300 fish was 55% above the 1983 to 1992 average, but 30% below the new goal of 4,700. This was the second highest count since the weir was first operated in 1976. Fifty-seven of the 3,300 chinook through the Klukshu Weir were harvested in the Indian food fisheries.

Table 1. Yakutat areas open to set gillnet fishing by time and area, 1993.

Stat. Week	Date	Day	Yakutat District										Yakutat Bay					Yakutat District		
			Alsek River	East River	Akwe River	Itallo River	Dangerous River	Situk River	Lost River	Streams of Manby Shore	South 59°40"	North 59°40"	Yakutat River	Remainder District	Kaliakh River	Tsiu River	Remainder District			
25	14-Jun-93	Mon.	12	-	-	-	18	18	-	-	18	-	-	-	-	-	-			
	15-Jun-93	Tues.	12	-	-	-	24	6	-	-	24	-	-	-	-	-	-			
	16-Jun-93	Wed.	-	-	-	-	18	-	-	-	18	-	-	-	18	-	18			
	17-Jun-93	Thurs	-	-	-	-	-	-	-	-	-	-	-	-	24	-	24			
	18-Jun-93	Fri.	-	-	-	-	-	-	-	-	-	-	-	-	18	-	18			
26	21-Jun-93	Mon.	12	-	-	-	18	18	18	-	18	18	-	-	-	-	-			
	22-Jun-93	Tues.	24	-	-	-	24	24	24	-	24	24	-	-	-	-	-			
	23-Jun-93	Wed.	12	-	-	-	18	24	24	-	24	24	-	-	18	-	18			
	24-Jun-93	Thurs	-	-	-	-	-	24	18	-	18	18	-	-	24	-	24			
	25-Jun-93	Fri.	-	-	-	-	-	18	-	-	-	-	-	-	18	-	18			
27	28-Jun-93	Mon.	12	12	18	-	18	18	18	18	18	18	18	18	-	-	-			
	29-Jun-93	Tues.	24	12	18	-	24	24	24	24	24	24	24	24	-	-	-			
	30-Jun-93	Wed.	24	-	-	-	18	24	24	18	24	24	18	18	18	-	18			
	01-Jul-93	Thurs.	12	-	-	-	-	24	24	-	24	24	-	-	24	-	24			
	02-Jul-93	Fri.	-	-	-	-	-	18	18	-	18	18	-	-	18	-	18			
28	04-Jul-93	Sun.	-	-	-	-	-	18	-	-	-	-	-	-	-	-	-			
	05-Jul-93	Mon.	12	12	18	-	18	24	18	18	18	18	18	18	-	-	-			
	06-Jul-93	Tues.	24	12	18	-	24	24	24	24	24	24	24	24	-	-	-			
	07-Jul-93	Wed.	12	-	-	-	18	24	24	18	24	24	18	18	18	-	18			
	08-Jul-93	Thurs	-	-	-	-	-	24	24	-	24	24	-	-	24	-	24			
	09-Jul-93	Fri.	-	-	-	-	-	18	18	-	18	18	-	-	18	-	18			
29	11-Jul-93	Sun.	-	-	-	-	-	18	-	-	-	-	-	-	-	-	-			
	12-Jul-93	Mon.	12	12	18	-	18	24	18	18	18	18	18	18	-	-	-			
	13-Jul-93	Tues.	24	24	24	-	24	24	24	24	24	24	24	24	-	-	-			
	14-Jul-93	Wed.	12	12	18	-	18	24	24	18	24	24	18	18	18	-	18			
	15-Jul-93	Thurs	-	-	-	-	-	24	24	-	24	24	-	-	24	-	24			
	16-Jul-93	Fri.	-	-	-	-	-	18	18	-	18	18	-	-	18	-	18			
30	18-Jul-93	Sun.	-	-	-	-	-	18	-	-	-	-	-	-	-	-	-			
	19-Jul-93	Mon.	12	12	18	-	18	24	18	18	18	18	18	18	-	-	-			
	20-Jul-93	Tues.	24	24	24	-	24	24	24	24	24	24	24	24	-	-	-			
	21-Jul-93	Wed.	24	12	18	-	18	24	24	18	24	24	18	18	18	-	18			
	22-Jul-93	Thurs	12	-	-	-	-	24	18	-	18	18	-	-	24	-	24			
	23-Jul-93	Fri.	-	-	-	-	-	18	-	-	-	-	-	-	18	-	18			

--Continued--

Table 1. (page 2 of 3).

Stat. Week	Date	Day	Yakutat District										Yakutat District					
			Alsek River	East River	Akwe River	Itallo River	Dangerous River	Situk River	Lost River	Streams of Manby Shore	Yakutat Bay		Yakutze River	Remainder District	Kaliakh River	Tsui River	Remainder District	
31	26-Jul-93	Mon.	12	12	18	-	18	18	18	18	18	18	18	18	-	-	-	
	27-Jul-93	Tues.	24	24	18	-	24	24	24	24	24	24	24	24	-	-	-	
	28-Jul-93	Wed.	24	24	-	-	18	24	24	18	24	24	18	18	18	-	18	
	29-Jul-93	Thurs.	12	12	-	-	-	24	18	-	18	18	-	-	24	-	24	
	30-Jul-93	Fri.	-	-	-	-	-	18	-	-	-	-	-	-	18	-	18	
32	02-Aug-93	Mon.	12	12	12	-	12	12	12	12	12	12	12	12	15	-	15	
	03-Aug-93	Tues.	24	24	24	-	24	24	24	24	24	24	24	24	24	-	24	
	04-Aug-93	Wed.	24	24	12	-	24	24	24	24	24	24	24	24	24	-	24	
	05-Aug-93	Thurs.	24	24	-	-	12	24	12	12	12	12	12	12	9	-	9	
	06-Aug-93	Fri.	12	12	-	-	-	12	-	-	-	-	-	-	-	-	-	
33	09-Aug-93	Mon.	12	12	12	-	12	12	12	12	12	12	12	12	15	-	15	
	10-Aug-93	Tues.	24	24	24	-	24	24	24	24	24	24	24	24	24	-	24	
	11-Aug-93	Wed.	24	24	12	-	24	24	24	24	24	24	24	24	24	-	24	
	12-Aug-93	Thurs	12	24	-	-	12	24	12	12	12	12	12	12	9	-	9	
	13-Aug-93	Fri.	-	12	-	-	-	12	-	-	-	-	-	-	-	-	-	
34	15-Aug-93	Sun.	-	12	-	-	-	-	-	-	-	-	-	-	-	-	-	
	16-Aug-93	Mon.	12	24	12	-	12	12	12	12	12	12	12	12	15	-	15	
	17-Aug-93	Tues.	24	24	24	-	24	24	24	24	24	24	24	24	24	-	24	
	18-Aug-93	Wed.	24	24	12	-	24	24	24	24	24	24	24	24	24	-	24	
	19-Aug-93	Thurs.	12	24	-	-	12	12	12	12	12	12	12	12	9	-	9	
	20-Aug-93	Fri.	-	12	-	-	-	-	-	-	-	-	-	-	-	-	-	
35	23-Aug-93	Mon.	12	12	12	-	12	12	12	12	12	12	12	12	15	15	15	
	24-Aug-93	Tues.	24	24	24	-	24	24	24	24	24	24	24	24	24	9	24	
	25-Aug-93	Wed.	24	24	12	-	24	24	24	24	24	24	24	24	24	15	24	
	26-Aug-93	Thurs	12	24	-	-	12	12	12	12	12	12	12	12	9	9	9	
	27-Aug-93	Fri.	-	24	-	-	-	-	-	-	-	-	-	-	-	-	-	
	28-Aug-93	Sat.	-	24	-	-	-	-	-	-	-	-	-	-	-	-	-	
36	29-Aug-93	Sun.	-	24	-	-	-	-	-	-	-	-	-	-	-	-	-	
	30-Aug-93	Mon.	12	24	12	-	12	12	12	12	12	12	12	12	15	15	15	
	31-Aug-93	Tues.	24	24	24	-	24	24	24	24	24	24	24	24	24	9	24	
	01-Sep-93	Wed.	24	24	12	-	24	24	24	24	24	24	24	24	24	15	24	
	02-Sep-93	Thurs	12	24	-	-	12	12	12	12	12	12	12	12	9	9	9	
	03-Sep-93	Fri.	-	12	-	-	-	-	-	-	-	-	-	-	-	-	-	

--Continued--

Table 1. (page 3 of 3).

Stat. Week	Date	Day	Yakutat District										Yakataga District				
			Alsek River	East River	Akwe River	Itallo River	Dangerous River	Situk River	Lost River	Streams of Manby Shore	Yakutat Bay		Yahrtze River	Remainder District	Kaliakh River	Tsiu River	Remainder District
37	06-Sep-93	Mon.	12	12	12	-	12	12	12	12	12	12	12	12	15	15	15
	07-Sep-93	Tue.	24	24	24	-	24	24	24	24	24	24	24	24	24	9	24
	08-Sep-93	Wed.	24	24	12	-	24	24	24	24	24	24	24	24	24	15	24
	09-Sep-93	Thurs.	12	12	-	-	12	24	24	12	24	12	12	12	9	9	9
	10-Sep-93	Fri.	-	-	-	-	-	12	12	-	12	-	-	-	-	15	-
	11-Sep-93	Sat.	-	-	-	-	-	-	-	-	-	-	-	-	-	9	-
38	13-Sep-93	Mon.	12	12	12	12	12	12	12	12	12	12	12	12	15	15	15
	14-Sep-93	Tues.	24	24	24	24	24	24	24	24	24	24	24	24	24	9	24
	15-Sep-93	Wed.	24	24	12	24	24	24	24	24	24	24	24	24	24	15	24
	16-Sep-93	Thurs.	12	12	-	12	12	24	24	12	24	12	12	12	24	9	9
	17-Sep-93	Fri.	-	-	-	-	-	12	12	-	12	-	-	-	9	15	-
	18-Sep-93	Sat.	-	-	-	-	-	-	-	-	-	-	-	-	-	9	-
39	20-Sep-93	Mon.	12	12	12	12	12	12	12	12	12	12	12	12	15	15	15
	21-Sep-93	Tues.	24	24	24	24	24	24	24	24	24	24	24	24	24	9	24
	22-Sep-93	Wed.	12	24	24	24	24	24	24	24	24	24	24	24	24	15	24
	23-Sep-93	Thurs.	-	12	12	24	24	24	24	12	24	12	12	12	24	9	9
	24-Sep-93	Fri.	-	-	-	12	12	12	12	-	12	-	-	-	9	15	-
	25-Sep-93	Sat.	-	-	-	-	-	-	-	-	-	-	-	-	-	9	-
40	27-Sep-93	Mon.	-	12	12	12	12	12	12	12	12	12	12	12	15	15	15
	28-Sep-93	Tues.	-	24	24	24	24	24	24	24	24	24	24	24	24	9	24
	29-Sep-93	Wed.	-	24	24	24	24	24	24	24	24	24	24	24	24	15	24
	30-Sep-93	Thurs.	-	12	24	24	24	24	24	12	24	12	12	12	24	9	9
	01-Oct-93	Fri.	-	-	12	12	12	12	12	-	12	-	-	-	9	15	-
	02-Oct-93	Sat.	-	-	-	-	-	-	-	-	-	-	-	-	-	9	-
41	04-Oct-93	Mon.	-	12	12	12	12	12	12	12	12	12	12	12	15	15	15
	05-Oct-93	Tues.	-	24	24	24	24	24	24	24	24	24	24	24	24	24	24
	06-Oct-93	Wed.	-	24	24	24	24	24	24	24	24	24	24	24	24	24	24
	07-Oct-93	Thurs.	-	12	12	24	24	24	24	12	24	12	12	12	24	24	9
	08-Oct-93	Fri.	-	-	-	12	12	12	12	-	12	-	-	-	9	9	-
	09-Oct-93	Sat.	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Table 2. Yakutat annual commercial set gillnet salmon catches in numbers, by species.

Year	Chinook	Sockeye	Coho	Pink	Chum	Total
1960	908	44,671	119,149	12,911	277	177,916
1961	2,534	82,403	128,670	63,608	11,038	288,253
1962	2,747	73,937	170,776	26,063	616	274,139
1963	941	52,517	141,365	78,697	10,294	283,814
1964	1,488	90,175	169,780	40,038	1,481	302,962
1965	1,323	120,417	122,207	4,402	4,094	252,443
1966	1,555	185,360	66,252	1,405	3,396	257,968
1967	742	88,431	97,211	31,580	4,459	222,423
1968	697	80,776	92,005	2,130	13,866	189,474
1969	1,887	117,725	32,262	63,692	14,927	230,493
1970	2,272	112,169	29,748	3,555	7,093	154,837
1971	1,945	129,206	37,420	79,973	4,986	253,530
1972	2,376	131,484	45,704	2,903	8,290	190,757
1973	2,733	128,412	41,213	16,998	8,995	198,351
1974	2,214	82,413	77,556	4,248	4,185	170,616
1975	2,224	73,260	37,403	80,043	3,761	196,691
1976	1,830	130,176	51,743	28,492	7,746	219,987
1977	2,549	185,391	92,214	75,504	8,652	364,310
1978	3,057	130,681	137,408	30,522	6,181	307,849
1979	4,299	165,069	95,873	152,053	7,399	424,693
1980	2,800	159,152	119,648	141,998	20,151	443,749
1981	2,069	149,573	132,127	133,863	10,633	428,265
1982	1,456	212,368	148,994	9,886	6,305	379,009
1983	976	152,541	81,517	25,378	11,195	271,607
1984	1,062	102,545	182,256	19,870	32,230	337,963
1985	1,231	234,886	203,193	16,362	12,466	468,138
1986	1,425	150,619	87,871	7,248	16,609	263,772
1987	2,072	259,979	124,406	12,910	14,555	413,922
1988	893	162,168	205,866	120,204	29,247	518,378
1989	810	329,563	176,847	59,319	16,238	582,777
1990	664	344,461	148,890	30,839	5,813	530,667
1991	1,750	229,854	166,380	3,051	2,979	404,014
1992	2,025	313,840	290,343	18,467	7,620	632,295
Average 1960 to 1992						
	1,805	151,704	116,797	42,370	9,630	322,305
1993 PRELIMINARY						
	1,310	345,997	237,549	9,903	4,065	598,824

Table 3. Yakutat 1993 commercial set gillnet salmon catches by area in numbers, by species.

Area	Chinook	Sockeye	Coho	Pink	Chum	Total
Akwe River	30	3,973	3,168	10	39	7,220
Alsek River	300	20,043	1,215	0	49	21,607
East River	13	189,207	4,529	25	3,423	191,197
Kaliakh River	0	0	7,980	0	1	7,981
Tsiu River	1	20	56,736	0	1	56,758
Itallo River	0	2	2,898	0	0	2,900
Lost River	17	3,999	9,310	47	17	13,390
Manby Shore	6	3,634	266	3	22	3,549
Situk-Ahrnklin	789	104,049	136,910	8,751	433	250,932
Yakutat Bay	148	19,176	4,398	1,054	72	24,848
Manby Shore Streams	0	239	5,083	0	0	5,322
Humpy Creek	0	0	0	0	0	0
Miscellaneous	6	1,655	5,056	13	8	6,738
Total	1,310	345,997	237,549	9,903	4,065	598,824

Table 4. Yakutat annual commercial Alsek River set gillnet salmon catches in numbers, by species.

Year	Chinook	Sockeye	Coho	Pink	Chum	Total
1960	525	16,502	5,932	53	109	23,121
1961	2,120	23,339	7,679	84	86	33,308
1962	2,278	14,475	8,362	93	133	25,341
1963	131	6,055	7,164	42	34	13,426
1964	591	14,127	9,760	144	367	24,989
1965	719	28,487	9,638	10	72	38,926
1966	934	29,091	2,688	22	240	32,975
1967	225	11,108	10,090	107	30	21,560
1968	215	26,918	10,586	82	240	38,041
1969	685	29,259	2,493	38	61	32,536
1970	1,128	22,654	2,188	6	26	26,002
1971	1,222	25,314	4,730	3	120	31,389
1972	1,827	18,717	7,296	37	280	28,157
1973	1,757	26,523	4,395	26	283	32,984
1974	1,162	16,747	7,046	13	107	25,075
1975	1,379	13,842	2,230	16	261	17,728
1976	512	19,741	4,883	0	368	25,504
1977	1,402	40,780	11,817	689	483	55,171
1978	2,441	50,580	13,913	59	233	67,226
1979	2,525	41,449	6,158	142	263	50,537
1980	1,382	25,589	7,863	21	1,005	35,860
1981	779	23,697	10,096	65	816	35,453
1982	532	27,389	6,534	6	358	34,819
1983	94	18,546	5,253	20	432	24,345
1984	60	14,326	7,868	24	1,610	23,888
1985	213	5,940	5,622	3	427	12,205
1986	478	24,791	1,344	13	462	27,088
1987	347	11,393	2,517	0	1,924	16,181
1988	223	6,286	4,986	7	907	12,409
1989	240	13,513	5,972	2	1,031	20,758
1990	78	16,852	1,437	0	495	18,862
1991	103	17,542	5,956	0	103	23,704
1992	301	19,310	3,310	0	49	23,058
Average 1960 to 1992						
	867	21,239	6,297	55	409	28,867
1993 PRELIMINARY						
	300	20,043	1,215	0	49	21,607

Table 5. Yakutat annual commercial East River set gillnet salmon catches in numbers, by species.

Year	Chinook	Sockeye	Coho	Pink	Chum	Total
1960	5	2,926	709	227	11,533	23,121
1961	0	1,784	310	195	10,564	12,853
1962	1	6,497	840	627	16,916	25,341
1963	0	3,233	264	162	9,894	13,553
1964	0	853	5,122	1,081	665	7,721
1965	0	824	1,039	176	3,727	5,766
1966	1	2,863	1,061	45	2,908	6,878
1967	0	2,473	318	1	4,282	7,074
1968	1	3,798	3,482	484	12,967	20,732
1969	4	10,886	1,134	178	14,495	26,697
1970	9	21,673	3,325	296	7,010	32,313
1971	59	12,416	3,722	309	4,483	20,989
1972	10	9,575	1,685	0	7,774	19,044
1973	33	12,342	1,353	109	6,152	19,989
1974	129	14,520	3,231	109	3,231	21,220
1975	147	18,235	1,442	114	3,150	23,088
1976	156	29,726	1,280	136	6,416	37,714
1977	115	21,420	4,140	505	6,811	32,991
1978	61	30,922	7,635	200	5,363	44,181
1979	287	47,442	4,124	1,052	5,791	58,696
1980	76	48,366	2,456	557	18,255	69,710
1981	125	49,346	6,933	2,397	8,650	67,451
1982	84	98,837	2,578	493	4,731	106,723
1983	36	81,201	4,988	359	9,392	95,976
1984	121	39,353	10,924	839	22,354	73,591
1985	119	184,962	8,932	1,018	10,705	205,736
1986	111	74,972	2,823	348	14,317	92,571
1987	187	133,740	4,890	148	10,225	149,190
1988	40	61,483	20,148	2,628	24,453	108,752
1989	42	145,516	7,287	678	13,724	167,247
1990	45	161,378	7,482	532	4,578	174,015
1991	49	45,334	3,857	2	2,196	51,438
1992	15	144,300	21,550	6	6,838	172,709
Average 1960 to 1992						
	62	46,157	4,578	487	8,926	60,241
1993 PRELIMINARY						
	13	189,207	4,529	25	3,423	197,197

Table 6. Yakutat annual commercial Yakutat Bay set gillnet salmon catches in numbers, by species.

Year	Chinook	Sockeye	Coho	Pink	Chum	Total
1960	24	2,521	1,801	7,302	12	11,660
1961	28	7,485	2,976	47,254	43	57,786
1962	99	5,472	6,068	11,255	15	22,909
1963	141	3,541	3,198	5,457	8	12,345
1964	115	7,716	6,796	22,160	62	36,849
1965	86	10,177	2,490	525	8	13,286
1966	43	9,903	1,861	202	25	12,034
1967	241	4,848	1,332	9,605	6	16,032
1968	31	10,526	1,281	169	14	12,021
1969	29	10,410	1,133	1,504	13	13,089
1970	119	11,596	99	660	15	12,489
1971	106	13,732	50	597	3	14,488
1972	115	15,488	258	492	15	16,368
1973	79	9,962	377	2,886	23	13,327
1974	64	5,187	1,326	455	12	7,044
1975	41	5,144	447	3,094	5	8,731
1976	69	9,977	1,179	1,639	55	12,919
1977	53	14,150	91	8,202	81	22,577
1978	108	5,399	635	6,618	9	12,769
1979	51	3,635	556	3,396	5	7,643
1980	164	9,341	2,063	16,150	79	27,797
1981	151	14,389	1,806	12,024	68	28,438
1982	419	24,852	3,991	3,688	269	33,219
1983	371	17,844	3,739	6,793	428	29,175
1984	145	9,213	3,381	2,139	1,010	15,888
1985	240	11,665	3,618	5,514	685	21,722
1986	211	21,724	3,060	5,234	680	30,909
1987	329	25,230	2,417	1,750	197	29,923
1988	196	14,210	3,086	7,792	627	25,911
1989	297	24,528	4,712	8,501	309	38,347
1990	304	41,854	5,472	4,969	359	52,958
1991	392	28,581	5,296	506	397	35,172
1992	147	31,706	6,567	4,866	236	43,522
Average 1960 to 1992						
	152	13,702	2,520	6,467	175	22,707
1993 PRELIMINARY						
	148	19,176	4,398	1,054	72	24,848

Table 7. Yakutat annual commercial Manby Shore Ocean and Streams set gillnet salmon catches in numbers, by species.

Year	Chinook	Sockeye	Coho	Pink	Chum	Total
1960	0	0	0	0	0	0
1961	0	0	0	0	0	0
1962	0	0	0	0	0	0
1963	114	2,496	21,827	101	1	24,539
1964	0	35	26,638	0	0	26,673
1965	3	430	11,167	19	1	11,620
1966	0	0	0	0	0	0
1967	0	0	7,783	0	0	7,783
1968	0	7	7,638	3	0	7,648
1969	0	0	4,833	12	0	4,845
1970	0	1	3,190	1	0	3,192
1971	0	0	0	0	0	0
1972	0	0	2,953	0	0	2,953
1973	0	5	1,770	6	824	2,605
1974	2	64	2,199	6	232	2,503
1975	0	0	3,426	0	0	3,426
1976	0	0	11,906	10	0	11,916
1977	6	9,785	12,130	10	0	21,931
1978	2	3,149	9,277	126	1	12,555
1979	2	6,232	4,575	3	0	10,812
1980	54	10,620	8,611	65	2	19,352
1981	34	13,463	8,161	164	10	21,832
1982	26	18,657	10,544	35	101	29,363
1983	24	7,819	5,391	142	12	13,388
1984	45	6,093	17,594	1	8	23,741
1985	8	5,677	16,119	33	7	21,844
1986	0	5,013	4,080	3	5	9,101
1987	15	8,109	7,606	0	4	15,734
1988	13	11,923	20,844	106	1	32,887
1989	23	33,078	7,150	47	6	40,304
1990	44	25,666	16,295	3	41	42,049
1991	30	10,971	5,609	0	26	16,636
1992	5	4,983	8,112	7	5	13,112
Average 1960 to 1992 (for the years fished)						
	15	6,143	9,384	31	43	15,616
1993 PRELIMINARY						
	6	3,873	5,349	3	22	9,094

Table 8. Yakutat annual commercial Situk-Ahrnklin Inlet set gillnet salmon catches in numbers, by species.

Year	Chinook	Sockeye	Coho	Pink	Chum	Total
1960	312	18,888	25,613	3,701	78	48,592
1961	367	35,411	26,324	12,589	97	74,788
1962	337	43,426	53,502	12,273	325	109,863
1963	466	29,541	38,294	14,266	276	82,843
1964	706	55,729	43,079	13,431	135	113,080
1965	442	66,874	20,454	3,229	122	91,121
1966	411	126,452	15,963	952	145	143,923
1967	203	61,255	23,278	19,832	67	104,635
1968	312	29,249	19,149	518	273	49,501
1969	1,089	55,856	10,656	2,897	85	70,583
1970	927	46,249	11,879	1,142	16	60,213
1971	473	62,364	21,389	2,890	79	87,195
1972	303	80,405	17,848	966	87	99,609
1973	752	67,194	10,026	11,395	171	89,538
1974	791	42,228	32,968	3,263	16	79,266
1975	562	30,354	16,408	6,686	2	54,012
1976	1,002	60,678	15,664	6,939	171	84,454
1977	833	83,970	32,020	24,347	202	141,372
1978	382	31,363	32,057	7,294	53	71,149
1979	1,028	46,384	17,624	30,131	236	95,403
1980	969	32,357	21,935	32,823	76	88,160
1981	858	29,093	37,871	26,515	252	94,589
1982	248	29,751	27,549	4,482	140	62,170
1983	349	17,797	15,186	6,864	240	40,436
1984	512	7,401	47,511	12,446	844	68,714
1985	484	18,620	55,223	8,800	166	83,293
1986	202	7,617	14,760	1,503	120	24,202
1987	891	63,595	29,898	10,851	986	106,221
1988	299	52,108	61,689	15,323	886	130,305
1989	1	99,945	39,318	42,974	833	183,071
1990	0	90,735	45,075	23,895	283	159,989
1991	786	120,074	89,434	2,534	186	213,014
1992	1,504	105,154	133,957	13,552	389	254,556
Average 1960 to 1992						
	606	52,973	33,442	11,555	244	98,784
1993 PRELIMINARY						
	789	104,049	136,910	8,751	433	250,932

Table 9. Yakutat annual commercial Lost River set gillnet salmon catches in numbers, by species.

Year	Chinook	Sockeye	Coho	Pink	Chum	Total
1960	46	3,800	9,546	1,187	2	14,581
1961	18	5,319	8,447	924	4	14,712
1962	32	4,744	10,783	679	20	16,258
1963	62	3,346	10,228	1,149	19	14,804
1964	64	6,868	12,197	2,166	20	21,315
1965	58	10,012	7,463	349	8	17,890
1966	12	9,374	2,605	103	5	12,099
1967	8	3,909	3,275	970	2	8,164
1968	44	6,145	6,958	59	12	13,218
1969	34	6,777	3,133	333	0	10,277
1970	50	6,550	2,401	160	8	9,169
1971	22	6,012	2,719	70	2	8,825
1972	19	4,076	3,627	35	6	7,763
1973	23	4,495	2,385	458	26	7,387
1974	18	1,948	4,300	280	4	6,550
1975	29	1,976	3,486	427	9	5,927
1976	42	4,607	3,786	783	15	9,233
1977	25	8,925	6,052	3,138	17	18,157
1978	21	3,831	6,360	789	7	11,008
1979	59	3,818	4,265	1,923	35	10,100
1980	42	3,880	6,813	2,035	12	12,782
1981	11	2,316	7,471	634	16	10,448
1982	12	4,980	9,366	719	14	15,091
1983	3	2,158	5,223	1,554	9	8,947
1984	22	726	10,717	1,864	96	13,425
1985	12	1,418	9,098	315	14	10,857
1986	6	491	2,489	80	9	3,075
1987	39	2,160	3,750	125	38	6,112
1988	22	2,316	5,905	478	41	8,762
1989	15	3,090	5,737	816	20	9,678
1990	0	3,093	4,922	218	5	8,238
1991	21	2,789	3,621	7	3	6,441
1992	20	3,170	10,244	33	1	13,468
Average 1960 to 1992						
	28	4,216	6,042	753	15	11,053
1993 PRELIMINARY						
	17	3,999	9,310	47	17	13,390

Table 10. Yakutat annual commercial Dangerous River set gillnet salmon catches in numbers, by species.

Year	Chinook	Sockeye	Coho	Pink	Chum	Total
1960	0	0	0	0	0	0
1961	0	0	0	0	0	0
1962	0	0	0	0	0	0
1963	0	0	0	0	0	0
1964	0	0	0	0	0	0
1965	0	0	0	0	0	0
1966	0	0	0	0	0	0
1967	0	0	0	0	0	0
1968	0	264	0	0	0	264
1969	0	0	0	0	0	0
1970	0	0	0	0	0	0
1971	0	0	0	0	0	0
1972	0	0	0	0	0	0
1973	0	0	132	0	1	133
1974	0	0	0	0	0	0
1975	0	0	0	0	0	0
1976	0	0	0	0	0	0
1977	0	16	553	8	2	579
1978	0	29	1,144	15	5	1,193
1979	0	0	0	0	0	0
1980	0	0	0	0	0	0
1981	0	0	1,861	0	20	1,881
1982	0	0	0	0	0	0
1983	0	0	0	0	0	0
1984	3	142	267	0	0	412
1985	7	557	17	16	0	597
1986	10	2,811	202	22	8	3,053
1987	4	2,433	0	0	0	2,437
1988	0	1,305	0	0	0	1,305
1989	0	1,122	421	2	2	1,547
1990	0	710	454	0	5	1,169
1991	104	390	0	0	0	494
1992	*	*	*	*	*	*
Average 1960 to 1992 (for the years fished)						
	9	842	362	5	3	1,225
1993 PRELIMINARY						
	6	1,655	869	13	8	2,551

* Where the number of permits participating is less than three, the information is considered confidential.

Table 11. Yakutat annual commercial Italo River set gillnet salmon catches in numbers, by species.

Year	Chinook	Sockeye	Coho	Pink	Chum	Total
1960	0	839	4,336	18	34	5,227
1961	0	3,693	1,704	696	166	6,259
1962	1	1,375	7	12	6	1,401
1963	0	0	1,266	44	0	1,310
1964	0	0	0	0	0	0
1965	0	0	0	0	0	0
1966	0	0	0	0	0	0
1967	0	0	0	0	0	0
1968	0	593	3,866	161	106	4,726
1969	0	0	1,637	7	30	1,674
1970	0	88	150	5	0	243
1971	0	0	0	0	0	0
1972	0	0	940	9	0	949
1973	1	1,723	1,785	215	1,382	5,106
1974	2	99	5,460	49	487	6,097
1975	1	365	3,064	70	239	3,739
1976	2	1,239	4,553	344	410	6,548
1977	7	1,166	4,912	1,048	773	7,906
1978	4	1,012	8,130	218	385	9,749
1979	19	2,315	6,110	3,622	910	12,976
1980	3	302	6,927	366	524	8,122
1981	3	1,668	6,138	2,657	709	11,175
1982	6	2,931	6,940	287	610	10,774
1983	0	1,349	4,804	445	605	7,203
1984	1	7,543	9,213	1,490	5,592	23,839
1985	4	1,314	9,491	359	435	11,603
1986	21	4,010	1,856	0	903	6,790
1987	2	932	1,399	3	677	3,013
1988	0	5	1,920	6	15	1,946
1989	0	0	99	0	0	99
1990	0	0	2,512	0	1	2,513
1991	0	0	1,778	0	0	1,778
1992	0	0	870	0	0	870
Average 1960 to 1992 (for the years fished)						
	3	1,234	3,638	433	536	5,844
1993 PRELIMINARY						
	0	2	2,898	0	0	2,900

Table 12. Yakutat annual commercial Akwe River set gillnet salmon catches in numbers, by species.

Year	Chinook	Sockeye	Coho	Pink	Chum	Total
1960	1	2,071	5,125	372	31	7,600
1961	0	5,206	13,359	1,844	78	20,487
1962	0	4,445	10,009	1,751	117	16,322
1963	27	4,276	6,913	10,152	51	21,419
1964	12	4,314	6,775	1,056	232	12,389
1965	15	3,611	2,703	83	156	6,568
1966	154	7,173	912	81	73	8,393
1967	65	4,496	2,014	244	72	6,891
1968	94	3,276	5,375	209	254	9,208
1969	45	4,384	601	372	239	5,641
1970	39	3,314	1,536	50	18	4,957
1971	62	9,310	4,656	24	0	14,052
1972	102	3,223	5,267	22	128	8,742
1973	88	6,132	4,670	164	125	11,179
1974	46	1,620	4,988	73	96	6,823
1975	65	3,177	3,160	773	83	7,258
1976	46	4,169	3,816	155	311	8,497
1977	108	4,936	10,299	630	272	16,245
1978	36	2,524	14,903	202	123	17,788
1979	116	7,055	10,223	2,372	139	19,905
1980	110	28,687	8,624	129	186	37,736
1981	108	15,467	6,691	918	64	23,248
1982	129	4,971	10,945	129	82	16,256
1983	99	5,822	5,290	152	74	11,437
1984	152	17,729	8,714	1,049	625	28,269
1985	144	4,676	4,429	94	27	9,370
1986	384	9,087	8,618	43	101	18,233
1987	257	12,175	7,119	33	501	20,085
1988	100	12,476	13,705	1,686	2,288	30,255
1989	192	8,653	10,136	491	313	19,788
1990	193	3,996	6,718	11	42	10,960
1991	265	4,172	5,697	2	67	10,203
1992	41	3,034	3,402	1	13	6,491
Average 1960 to 1992						
	100	6,656	6,588	769	212	14,324
1993 PRELIMINARY						
	30	3,973	3,168	10	39	7,220

Table 13. Yakutat annual commercial Humpback Creek set gillnet salmon catches in numbers, by species.

Year	Chinook	Sockeye	Coho	Pink	Chum	Total
1960	0	0	0	0	0	0
1961	0	0	0	0	0	0
1962	0	0	0	0	0	0
1963	0	29	327	47,324	11	47,691
1964	0	0	0	0	0	0
1965	0	0	0	0	0	0
1966	0	0	0	0	0	0
1967	0	0	1	821	0	822
1968	0	0	0	445	0	445
1969	1	153	913	58,351	4	59,422
1970	0	44	0	1,235	0	1,279
1971	1	58	154	76,080	299	76,592
1972	0	0	700	1,322	0	2,022
1973	0	36	8	1,738	6	1,788
1974	0	0	0	0	0	0
1975	0	167	296	68,863	12	69,338
1976	1	39	326	18,486	0	18,852
1977	0	240	59	36,922	11	37,232
1978	0	1	27	14,997	1	15,026
1979	210	6,723	599	109,412	17	116,961
1980	0	10	333	89,852	6	90,201
1981	0	134	373	88,389	28	88,924
1982	0	0	0	0	0	0
1983	0	5	130	9,047	3	9,185
1984	0	19	138	18	43	218
1985	0	55	0	210	0	265
1986	1	101	1	0	1	104
1987	0	0	0	0	0	0
1988	0	29	78	92,173	24	92,304
1989	0	4	0	5,798	0	5,802
1990	0	4	0	1,209	0	1,213
1991	Not Fished					
1992	Not Fished					
Average 1960 to 1992 (for the years fished)						
	10	357	203	32,850	21	33,440
1993 PRELIMINARY						
	Not Fished					

Table 14. Yakutat annual commercial Tsiu River set gillnet salmon catches in numbers, by species.

Year	Chinook	Sockeye	Coho	Pink	Chum	Total
1960	0	0	10,169	5	1	10,175
1961	0	0	0	0	0	0
1962	0	0	38,739	0	0	38,739
1963	0	0	19,771	0	0	19,771
1964	0	533	34,644	0	0	35,177
1965	0	1	41,357	8	0	41,366
1966	0	504	28,960	0	0	29,464
1967	0	342	34,899	0	0	35,241
1968	0	0	16,064	0	0	16,064
1969	0	0	3,144	0	0	3,144
1970	0	0	0	0	0	0
1971	0	0	0	0	0	0
1972	0	0	0	0	0	0
1973	0	0	8,803	1	0	8,804
1974	0	0	8,258	0	0	8,258
1975	0	0	0	0	0	0
1976	0	0	3,129	0	0	3,129
1977	0	0	5,691	0	0	5,691
1978	0	1,767	34,392	0	0	36,159
1979	2	16	32,621	0	3	32,642
1980	0	0	28,711	0	3	28,714
1981	0	0	30,109	0	0	30,109
1982	0	0	46,436	0	0	46,436
1983	0	0	20,119	0	0	20,119
1984	0	0	51,322	0	48	51,370
1985	0	0	63,922	0	0	63,922
1986	0	0	19,590	0	0	19,590
1987	0	0	35,297	0	0	35,297
1988	0	24	56,116	3	3	56,146
1989	0	41	62,939	2	0	62,982
1990	0	31	33,785	2	0	33,818
1991	0	0	38,195	0	1	38,196
1992	0	57	92,343	0	1	92,401
Average 1960 to 1992 (for the years fished)						
	0	118	32,126	1	2	32,247
1993 PRELIMINARY						
	1	20	56,736	0	1	56,758

Table 15. Yakutat annual commercial Kaliakh River set gillnet salmon catches in numbers, by species.

Year	Chinook	Sockeye	Coho	Pink	Chum	Total
1960	0	0	51,622	271	10	51,903
1961	0	0	51,417	13	0	51,430
1962	0	0	23,443	0	0	23,443
1963	0	0	15,833	0	0	15,833
1964	0	0	24,769	0	0	24,769
1965	0	1	25,896	3	0	25,900
1966	0	0	12,202	0	0	12,202
1967	0	0	9,486	0	0	9,486
1968	0	0	5,799	0	0	5,799
1969	0	0	785	0	0	785
1970	0	0	0	0	0	0
1971	0	0	0	0	0	0
1972	0	0	0	0	0	0
1973	0	0	601	0	2	603
1974	0	0	1,101	0	0	1,101
1975	0	0	0	0	0	0
1976	0	0	1,221	0	0	1,221
1977	0	0	1,778	0	0	1,778
1978	0	0	5,507	0	0	5,507
1979	0	0	5,266	0	0	5,266
1980	0	0	8,725	0	0	8,725
1981	0	0	3,093	0	0	3,093
1982	0	0	16,443	46	0	16,489
1983	0	0	4,598	0	0	4,598
1984	0	0	13,081	0	0	13,081
1985	0	2	23,015	0	0	23,017
1986	1	2	10,770	0	1	10,774
1987	1	8	15,923	0	2	15,934
1988	0	2	8,867	0	0	8,869
1989	0	0	16,858	0	0	16,858
1990	0	7	13,775	0	3	13,785
1991	0	0	4,379	0	0	4,379
1992	0	0	4,138	0	0	4,138
Average 1960 to 1992 (for the years fished)						
	0	1	13,117	11	1	13,130
1993 PRELIMINARY						
	0	0	7,980	0	0	7,981

Table 16. Yakutat annual commercial Yahtse River set gillnet salmon catches in numbers, by species.

Year	Chinook	Sockeye	Coho	Pink	Chum	Total
1960	0	50	5,005	2	0	5,057
1961	1	166	16,454	9	0	16,630
1962	0	0	19,863	0	0	19,863
1963	0	0	16,280	0	0	16,280
1964	0	0	0	0	0	0
1965	0	0	0	0	0	0
1966	0	0	0	0	0	0
1967	0	0	4,735	0	0	4,735
1968	0	0	11,807	0	0	11,807
1969	0	0	1,800	0	0	1,800
1970	0	0	4,980	0	0	4,980
1971	0	0	0	0	0	0
1972	0	0	5,130	20	0	5,150
1973	0	0	4,908	0	0	4,908
1974	0	0	6,679	0	0	6,679
1975	0	0	3,444	0	0	3,444
1976	0	0	0	0	0	0
1977	0	3	2,672	5	0	2,680
1978	2	104	3,428	4	1	3,539
1979	0	0	3,752	0	0	3,752
1980	0	0	15,016	0	3	15,019
1981	0	0	11,524	100	0	11,624
1982	0	0	7,668	1	0	7,669
1983	0	0	6,796	2	0	6,798
1984	1	0	1,526	0	0	1,527
1985	0	0	3,707	0	0	3,707
1986	0	0	18,278	2	2	18,282
1987	0	204	12,688	0	1	12,893
1988	0	1	2,836	2	0	2,839
1989	0	8	10,762	4	0	10,774
1990	0	112	7,478	0	1	7,591
1991	*	*	*	*	*	*
1992	Not Fished					
Average 1960 to 1992 (for the years fished)						
	0	24	7,749	6	0	7,780
1993 PRELIMINARY						
	*	*	*	*	*	*

* Where the number of permits participating is less than three, the information is considered confidential.

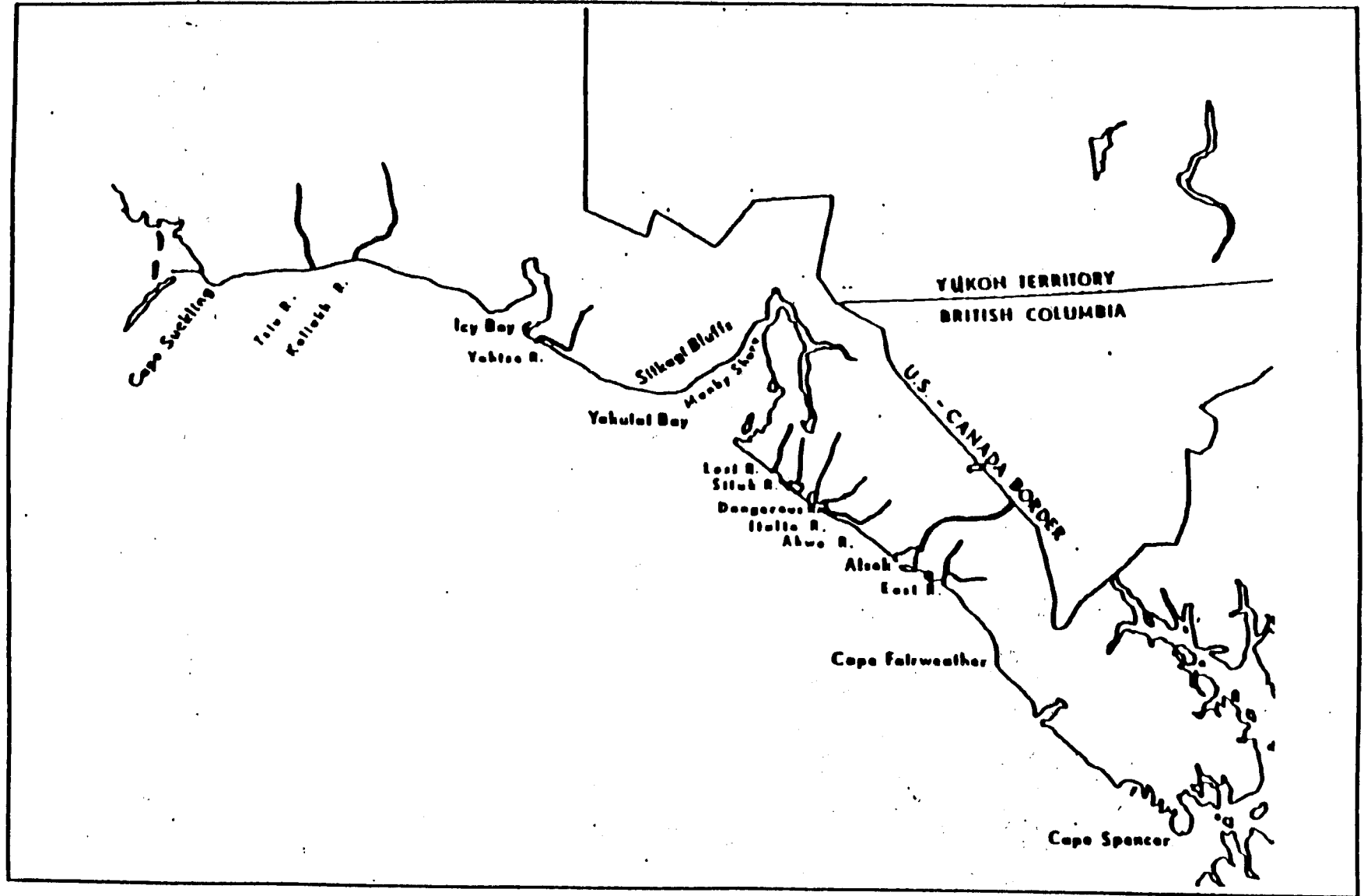


Figure 1. Yakutat Management Area (Cape Suckling to Cape Fairweather).

REPORT TO THE BOARD OF FISHERIES
SOUTHEAST ALASKA-YAKUTAT HERRING FISHERIES, 1992/1993



By

Robert C. Larson
Tim A. Minicucci

Alaska Department of Fish and Game
Commercial Fisheries Management and Development Division
Juneau, Alaska

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ABSTRACT

The 1992-93 Southeast Alaska and Yakutat commercial, subsistence, and personal use herring fisheries are reviewed. The total regional commercial herring harvest was 12,096 tons, an increase from the previous year's harvest of 9,414 tons. Total exvessel value was approximately \$3,947,813. The sac roe harvest totaled 10,955 tons for an estimated exvessel value of \$3,197,400. The catch of 1,122 tons in the winter bait fishery was worth an estimated exvessel value of \$249,106. The Alaska Board of Fisheries created a spawn-on-kelp fishery to begin in 1992 for the Craig/Klawock area. The harvest limit was established at 15% of the total guideline harvest level for the Craig/Klawock herring stock. The harvest of 5.2 tons of spawn on kelp, representing 240 tons of herring, in conjunction with a harvest of 14.2 tons of spawn on kelp, representing 150 tons of herring in Hoonah Sound, combined for an exvessel value of \$501,307. The sac roe fishery opened in the Sitka Sound and Kah Shakes/Cat Island areas, while Seymour Canal and Lynn Canal remained below their threshold levels. The winter bait fishery was opened in the Boca de Finas/Meares Passage area, along with additional openings in Lisianski Inlet, Deer Island, Port Houghton/Hobart Bay and Necker Bay. All other areas, including Yakutat, remained below required threshold levels. One fresh bait pound operated in the Sitka Sound area.

INTRODUCTION

This report reviews the commercial, subsistence, and personal use herring fisheries that occurred in the Southeast Alaska Region during the 1992-93 season. The Southeast Alaska Region is a composite of two statistical areas. Area A, the Southeast Alaska area, encompasses the waters south of Cape Fairweather and north of the International Boundary at Dixon Entrance. Area D, the Yakutat area, extends west from Cape Fairweather to Cape Suckling (Figure 1). Commercial winter bait, sac roe, spawn-on-kelp and fresh bait pound fisheries occur in the Southeast Alaska area. Only a winter bait season is provided by regulation in the Yakutat area. Subsistence and personal use harvesting of herring and spawn on kelp occurs in both areas.

History of the Herring Fishery

Pacific herring stocks are found throughout Southeast Alaska. The stocks vary greatly in size and productivity. In general, the stocks that spawn on the outer coastal areas are more productive than stocks that spawn in the inside waters. Southeast Alaska herring stocks have been commercially harvested since a salting operation was initiated in the 1880s. From the 1890s to the mid-1960s the catch was used primarily to supply herring for reduction to meal and oil. The reduction fishery occurred on mixed stocks of feeding herring during the summer months. The reduction fishery production peaked during the 1920s and 1930s when annual harvests commonly exceeded 50,000 tons (Tables 1 and 2). The reduction industry was phased out in the mid 1960s due a decline in the abundance of herring combined with the development of the Peruvian anchovy reduction industry.

Southeast Alaska herring stocks have historically supplied most of the bait for Alaskan commercial longline and crab fisheries. This harvest occurs during the fall and winter months, a time when bait quality is best, on discrete wintering schools in major bays and inlets. Most of the bait harvest is taken by purse seine gear. Relatively small quantities of herring are harvested for fresh bait pounds. Existing regulations provide for a tray pack bait fishery designed to produce a sport and commercial troll bait product; however, no harvest has occurred for this purpose in recent years.

Currently, most of the annual herring harvest is taken in the spring sac roe fishery which developed in the early 1970s. The sac roe fishery takes herring immediately prior to spawning when egg maturity is highest. A wild, spawn-on-kelp fishery occurred during the 1960s; however, this fishery was phased out in the early 1970s. A new herring spawn-on-kelp pound fishery was approved by the Alaska Board of Fisheries to begin in the spring of 1992.

Subsistence herring products have traditionally included spawn on kelp and herring spawn on hemlock branches. Beginning in 1989, new regulations became effective establishing personal use herring fisheries for individuals domiciled in communities not qualified for subsistence fishing. Additionally, new commercial fishing regulations established provisions allowing commercial fishermen to harvest herring for their own bait. This activity was managed previously managed under the subsistence fishing regulations.

The commercial utilization of Southeast Alaska herring resources is very controversial. Although the subsistence and personal use harvest levels are a minor portion of the total annual take, these uses are considered important to local residents. Commercial harvesting is viewed by much of the public as having a great impact on the local availability of herring. Additionally, herring are a major forage fish and their abundance is viewed as necessary to ensure healthy populations of predatory fish such as salmon and halibut.

Management Strategy

The management approach for Southeast Alaska herring fisheries is based on assessing populations to ensure that minimum spawning threshold levels are met prior to allowing a harvest. Distinct herring stock units are specified for harvesting the winter bait and spring sac roe fisheries. A major management concern is to minimize the harvest of individual stocks that occur in both fisheries. Although some overlapping of stocks probably does occur, it is not believed that significant "double dipping" of individual herring stocks occurs. The herring pound fishery utilizes some of the same stocks harvested in the winter bait and sac roe fisheries; however, the pound fishery harvest is small when compared to the winter bait or sac roe herring fishery harvest.

A "threshold level" is the minimum herring biomass needed to ensure sustained yield. Threshold levels have been established for each of the winter bait, sac roe, and spawn-on-kelp pound stocks. Threshold levels are based on all available data and are evaluated by stock condition and performance over time. Current threshold levels vary from 1,000 to 7,500 tons for the major sac roe and winter bait stocks. There is currently a 1,000 ton threshold for the spawn-on-kelp pound fishery in Hoonah Sound (Table 3).

Herring stocks with a spawning biomass of less than 2,000 tons, of which there are many, are not considered for harvesting in either the Southeast Alaska winter bait or sac roe fisheries. Under the current approach for setting seasonal harvest limits, herring stocks of 2,000 tons of adult fish would allow for an annual harvest of 200 tons of herring. The region's current management capability, combined with the highly competitive nature of these fisheries, make it impossible to successfully manage the winter bait

or sac roe fisheries for harvests of less than 200 tons. In the Yakutat area, a winter bait harvest of 100 tons was allowed in prior years. However, the Yakutat area now has a 1,000 ton escapement threshold.

Annual harvest limits are based on a graduated scale that allows for higher harvest rates as the herring population increases relative to the threshold level. A graph depicting this harvest management strategy is shown in Figure 2. The scale provides a uniform method for establishing harvest levels for each herring fishery. The approach allows for an annual harvest rate of between 10-20% of the mature herring if the established spawning threshold levels are satisfied. No harvesting is allowed if the biomass estimate for the stock is less than the threshold. When the estimate of mature spawning stock is at the threshold level, a 10% harvest is allowed. The harvest rate increases 2% each time the estimated spawning biomass increases by an amount equal to the threshold level. The harvest rate reaches a maximum of 20% when the population is six times the threshold level.

The successful accomplishment of the management approach is dependent upon the determination of the size of the herring populations, the age and growth characteristics of the individual populations, and spawning success on a stock by stock basis. The herring biomass for both the Southeast Alaska winter bait and sac roe stocks is determined either from post-spawning egg deposition dive surveys, or from vessel hydroacoustical surveys, or a combination of both methods. In cases where spawning ground surveys are used, the estimate includes only mature herring that spawned the previous season. It would not account for any mortality of the herring after spawning occurred, nor would it include any additional recruitment that may have been realized since the surveys were completed. For those instances where the population estimate is derived acoustically, only those herring that would be expected to contribute to the spawn are included in the estimate. This is determined by sampling the population with trawl gear and analyzing the age structure to ascertain only the mature segment of the population. Age and growth information is obtained by samples obtained from test fishing, commercial harvests, department mid-water trawling and department sampling on the spawning grounds.

SEASON SUMMARY

The 1992-93 season herring catch totalled approximately 12,096 tons (Table 1). The catch included 1,122 tons of winter bait herring, 10,955 tons of sac roe herring, and 19.4 tons of spawn on kelp, which represents 390 tons of herring. The total exvessel value was approximately \$3,947,813 of which \$3,197,400 was for sac roe herring, \$249,080 for bait herring, and \$501,307 for spawn on kelp. A summary of the 1992-93 season's herring fisheries by area is presented in Table 4.

1992/93 Winter Food and Bait Fishery

Winter herring fishing is allowed by regulation in Districts and/or Sections 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11-B, 11-C, 12, 13-A, 13-B (only south of the latitude of Aspid Cape), 13-C, 14, 15-A, and 16 in the Southeast Alaska area and in the entire Yakutat area. The general fishing season is specified to be from October 1 through February 28 in both areas. In the Southeast Alaska area, regulations specify the actual open fishing periods to be established by emergency order.

Although the existing regulations specify purse seines, set gill nets, and trawls as legal allowable gear, only purse seine gear has been fished in recent years.

Five stocks were identified as having harvestable quantities of bait herring during the 1992-93 winter season (Figure 3). The Craig/Klawock herring stock had an estimated spawning biomass of 12,350 tons in 1992 which produced a harvest quota of 1,362 tons for the traditional areas of Boca de Finas/Meares Passage. The estimated spawn biomass in the Lisianski Inlet area was 5,750 tons for a projected harvest quota of 720 tons. In the Union Bay, Deer Island area, an estimated spawning biomass of 2,050 tons which produced a projected harvest of 200 tons, while the Port Houghton/Hobart Bay area spawning biomass was estimated at 4,100 tons for a projected harvest of 500 tons of herring. In the Sitka area, Necker Bay had an estimated spawning biomass of 2,000 tons for a projected guideline harvest of 200 tons.

By the end of the season, 1,122 tons of winter bait had been harvested, far below the allowable harvest. The fishery in the Craig/Klawock area occurred between January 12 and February 28, 1993. Herring in the Craig/Klawock area remained on or near the bottom for most of the fishery and were of a small unmarketable size, thus accounting for the 629 ton harvest. The fishery in Lisianski Inlet took place from January 12 to March 15, 1993. Lisianski Inlet also experienced poor quality fish, producing a 239 ton harvest. There was no harvest in Hobart Bay/Port Houghton due to a lack of herring in the restricted area opened to fishing. The Deer Island area was open from January 12 thru February 28, with only an 8 ton harvest occurring due to the small size of the fish, the depth of the schools and a lack of herring in the area. Necker Bay was open on January 12 and as a result of extremely slow fishing the season was extended until March 15 when it closed with 176 tons being harvested. Surveys conducted in the Tenakee Inlet area revealed populations to be below their minimum threshold level, therefore no fishery occurred in Tenakee in 1993. A test fishery to obtain size and age composition was conducted in Sitka Sound which accounted for an additional 70 tons of catch. The summary of winter food and bait herring harvest by season and month is shown in Table 5.

1993 Sac Roe Fishery

Four sac roe herring fishing areas are established by regulation. They include two exclusive purse seine areas (Sitka Sound and Lynn Canal) and two exclusive set gill net areas (Kah Shakes and Seymour Canal) (Figure 4). Both gear types are under a limited entry system. Ninety-two permanent and 30 interim use gill net permits, and 44 permanent and 7 interim use purse seine permits were issued for the 1993 season.

A harvest of 10,955 tons of herring occurred during the 1992-93 season. This harvest resulted from a Sitka Sound catch of 10,186 tons and a catch at the Kah Shakes/Cat Island area of 737 tons. An additional 32 tons of herring was harvested in Hobart Bay from a test fishery in this area (Table 6).

In Sitka, a 20% harvest rate was applied to the 1992 spawning biomass estimate of 48,450 tons for a quota of 9,691 tons for the Sitka herring purse seine fishery. On March 24, 1993 it was announced that the Sitka Sound sac roe fishery would be placed on two hour notice effective 8:00 a.m., Friday, March 26. Based on intensive spawning on March 27, and good roe percentages from the test fishing efforts, the sac roe fishery opened at 2:00 p.m., and closed at 6:00 p.m. on March 27, and continued each day thereafter from 8:00 a.m. to 4:00 p.m., with a maximum catch not to exceed 5,000 tons. On March 29, the fishery closed at 1:00 p.m. with a 5,200 ton harvest. On March 30, the fishery was moved to the southern end of Sitka Sound where 2,000 tons were harvested on March 30 and 31. On April 2, an additional 1,110 tons of herring were harvested, bringing the total harvest to 8,310 tons. On April 13, the fishery was reopened in the Kanga Bay area and an additional 1,877 tons harvested. The fishery closed at 11:20 a.m., April 3, 1993 with a total harvest of 10,186 tons, and a 10.7 average roe percentage. Eight companies, 50 permit holders, and 76 tenders participated in this years "competitive/cooperative" fishery. Processors paid a base price of \$200 a ton for sac roe herring, which produced an exvessel value of approximately \$2,037,400. It is expected that some fishermen may expect an upward adjustment to that base price based on market conditions in Japan.

In 1991, the spawning distribution of the Kah Shakes herring population shifted from the traditional spawning grounds to the Cat Island area, approximately 10 miles west of Kah Shakes. The Board of Fisheries adopted a proposal submitted by the department to include Cat Island as part of the Kah Shakes herring population. In 1992 and 1993 almost all of the spawning that has occurred south of Ketchikan has been within the Cat Island area. Spawning, both on the Kah Shakes shoreline and on Annette Island has been very limited. In both of those years, the state managed sac roe fishery has taken place within the new registration area. Results from the previous year's surveys of the Kah Shakes/Cat Island area showed a biomass of 8,100 tons. This resulted in a 10.7% harvest rate with an estimated quota of 835 tons. In 1993 the State entered into a discussion with the Metlakatla Indian Community fisheries managers and

community leaders to try to better understand the movement of herring within the Dixon entrance area, and in particular the Kah Shakes/Cat Island/Annette Island spawning population. Both parties agreed that there had been a reduction of spawning occurring in the traditional areas and coincidental to these declines a large amount of spawning occurring at Cat Island. Although both parties agreed that the herring spawning at Cat Island were herring that had moved from their traditional areas, neither could agree on the percentage of spawn contributed from each stock to the new spawn appearing at Cat Island. The State offered to reduce its harvest for the 1993 season by 150 tons, the long term average of the Annette Island sac roe fishery. Although the State did reduce its harvest by 150 tons to avoid any over harvesting, reducing the allowable quota to 717 tons, Annette Island conducted their fisheries without an agreement and harvested 403 tons. It was announced that the Kah Shakes/Cat Island could be opened with a two-hour advance notice effective 12:00 noon, March 31, 1993. Extensive hydroacoustic surveys were conducted in the area monitoring schools of herring around the Cat Island area where an average of 20-30 schools of herring could be located for approximately seven days. Extensive aerial surveys were also conducted on a daily basis. At 8:00 a.m., April 10, 1993, it was announced that the Cat Island area would open for fishing at 10:00 a.m. The fishery opened at 10:00 a.m. on April 10, and 104 boats harvested 737 tons of herring with an average roe percent of 16.21. Processors paid an adjusted price of \$1600 a ton for 16% roe, giving the fishery an exvessel value of \$1,160,000.

Hydroacoustic and spawning ground surveys failed to locate the minimum population threshold level in the Lynn Canal purse seine and Seymour Canal fishing areas; therefore, no fishery was allowed during the 1992-93 season.

1992/93 Herring Pound Fishery

There are three types of herring pound fisheries in Southeast Alaska: tray pack bait, fresh bait, and spawn-on-kelp pounds. The tray pack pound fishery was created in 1979 when the Board of Fisheries allocated a harvest of up to 100 tons. Only limited catches occurred in the early 1980s. In recent years there has been no participation.

The fresh bait pounds are allowed by regulation under a permit system in six areas including Tee Harbor, Indian Cove, Farragut Bay, Scow Bay, Sitka Sound and Lisianski Inlet (Figure 5). Current regulations specify annual harvest quotas of 100 tons each for Farragut Bay, Scow Bay and Sitka Sound, 60 tons each for Tee Harbor and Indian Cove, and 25 tons for Lisianski Inlet. The average annual catch for the past 10 years (since 1983) was 43.8 tons for all areas combined (Table 7). In 1993, the only fresh bait pound operated was in Sitka Sound.

There are two spawn-on-kelp pound fisheries in Southeast Alaska, Craig and Hoonah Sound (Figure 7). The spawn-on-kelp fishery for the Craig area was initiated in the spring of 1992. The harvest limit was established at 15% of the total guideline harvest level for the Craig/Klawock stock. On December 21, 1992, Craig/Klawock herring pound application forms became available in ADF&G offices with a January 31, 1993 deadline. Of the 389 applications received, 209 permits were issued. Allocations of 229 blades of *Macrocystis* kelp and 1.15 tons of herring were allocated to each permit holder. On April 17 1993, the department opened seining for the introduction of herring into the pounds. Seining continued until Wednesday, April 28. Harvesting began on April 20, with 23 individuals harvesting roe-on-kelp. There were 5.2 tons of product harvested. Four companies bought product at an average price of \$4.17/lb, giving the fishery an exvessel value of \$156,400. All pounds were required to be removed from the water by June 6, 1993.

1993 was the fourth year of the spawn-on-kelp pound fishery in the Hoonah Sound area. The amount of herring allowed for the fishery is fixed at 150 tons. Permit applications became available in ADF&G offices for the Hoonah Sound pound fishery on December 21, 1992 with a January 31, 1993 deadline. Of the 230 applicants received, 115 permits were issued. During this years fishery, 101 fisherman were present on the grounds and were allocated equal shares of 1.3 tons of herring and 160 blades of kelp. Seining for herring occurred from April 26 through May 3. Of the 115 fisherman operating pounds, 61 captured herring to sell as spawn-on-kelp. An estimated 14.2 tons of spawn-on-kelp were sold in the 1993 fishery, for an exvessel of \$344,907. It was announced that all pounds were to be removed from the water by June 6, 1993.

Herring Spawn-on-Kelp Subsistence Fishery

The harvest of "wild" herring spawn on kelp has occurred traditionally throughout the region. The Southeast Alaska fishery is regulated solely through the issuance of subsistence spawn-on-kelp permits at local Fish and Game offices, while no permit is required for the Yakutat area. The permits specify times, areas and amounts of spawn on kelp allowed. Regulations set harvest limits at 32 lbs for individuals, and 158 lbs for families. No annual possession limit is specified for individuals, and additional permits are issued to permit holders if harvestable surpluses are available.

Subsistence spawn-on-kelp harvests occur in March and April near Craig, Hydaburg, Ketchikan, Kah Shakes, and Sitka where major herring spawning populations are found (Figure 6). Macrocystis is the preferred species of kelp used. In 1993, a combined total of 9,880 lbs. (Table 8) of spawn on kelp was harvested in these areas.

Personal Use and Personal Bait Harvest Fisheries

The 1989 regulations established two new herring fisheries in the Southeast Alaska region. First, a "personal use" fishery was established to allow Alaskan residents not domiciled in designated subsistence communities to continue to harvest herring for personal consumption. The personal use harvest does not have priority over other uses as does the subsistence harvest. However, in practice, the regulations allow herring personal use to continue the same as formerly allowed under the subsistence regulations. Harvest information is limited, as personal use regulations require a permit only for the harvest of herring spawn on kelp.

Second, the 1989 regulations established special provisions under commercial fishing regulations that allow commercial fishermen to harvest herring for their personal bait needs but not for sale. This allows fishermen the opportunity to continue harvesting their own bait as in the past but was no longer legal under the subsistence regulations. For harvests over 5 tons, a permit is required to allow tabulation of harvest. Approximately 70 tons of herring were estimated to have been harvested in Sitka Sound. Estimates for other communities were not made.

1993/94 SEASON OUTLOOK

In previous years the Guideline Harvest Level (GHL) for various stocks throughout Southeast Alaska has been established using estimates derived primarily from spawn deposition surveys. A new technique of stock assessment is currently being applied to supplement spawn deposition methods, for those areas in southeast for which sufficient data are available. This new technique, Age Structured Analysis (ASA) with auxiliary information, will be applied to some areas for the 1993-94 season. The ASA model will be used as a tool for forecasting run strength. Forecasts derived from spawn deposition surveys rely only on the most recent year's estimates of egg deposition to yield estimates of spawning biomass for the ensuing year. In addition, forecasts derived solely from spawn deposition surveys assume tacitly that additions to the next years spawning biomass from growth and recruitment equal the reductions in biomass due to natural mortality. In contrast to spawn deposition-based estimates, the ASA estimation method uses not only the most recent year's estimate of egg deposition, but also all previous year's estimates of egg deposition, catch-at-age, fecundity-at-age, weight-at-age, and spawning age composition, to yield more accurate estimates of historic biomasses and forecasts of the next year's spawning biomass. In contrast to the spawn deposition method, ASA expressly incorporates measures or estimates of survival (or natural mortality), growth and recruitment in forecasts of spawning biomass. The ASA method is most effective when based on a moderately long time series of catch-at-age, spawning age composition and absolute or relative abundance data. In the future, ASA-based forecasts may be applied to other areas as the time series of data for those areas becomes sufficiently long. This will be achieved most rapidly by regular, annual collection of relevant age composition and abundance data. The ASA method is currently being employed to forecast spawning biomass of herring in Southcentral Alaska, the Eastern Bering Sea and British Columbia. Different forms of ASA models are also integral parts of the stock assessments for most groundfish stocks in the Bering Sea and the Gulf of Alaska.

Data from the 1992-93 season is currently being analyzed. Results, individual stock status and fishery quotas will be available in January of 1994.

MACROCYSTIS KELP FISHERY

Macrocystis kelp is currently harvested in Southeast Alaska and transported to Prince William Sound where it is used as a substrate for the commercial herring spawn-on-kelp fisheries. Macrocystis is distributed along the outer coastal waters of the region, with higher concentrations in the more southerly, portion near Craig. A permit must be obtained prior to harvest which specifies the area of harvest, amount allowed, and cutting restrictions to maintain healthy Macrocystis beds. Permits are not issued in traditional herring spawning areas where kelp serves as an important substrate for spawn. Increasing amounts of kelp harvested since 1985 are the result of annually increasing quotas for herring spawn-on-kelp pounds in Prince William Sound (Table 9).

Table 1. Southeast Alaska herring catches in tons, 1900-01 through 1992-93 seasons.^{uv}

Season ^u	Total Catch	Season	Total Catch	Season	Total Catch
1900-01	1,194	1935-36	58,155	1970-71	5,015.0
1901-02	1,250	1936-37	36,713	1971-72	3,867.0
1902-03	812	1937-38	50,334	1972-73	6,307.0
1903-04	1,494	1938-39	22,356	1973-74	7,837.0
1904-05	1,521	1939-40	20,028	1974-75	7,985.0
1905-06	1,309	1940-41	3,137	1975-76	7,942.0
1906-07	1,005	1941-42	6,230	1976-77	8,640.0
1907-08	1,382	1942-43	3,691	1977-78	6,071.0
1908-09	1,711	1943-44	6,235	1978-79	6,532.0
1909-10	1,075	1944-45	16,801	1979-80	9,217.0
1910-11	6,867	1945-46	24,126	1980-81	8,393.0
1911-12	12,057	1946-47	37,564	1981-82	8,723.0
1912-13	16,067	1947-48	41,829	1982-83	9,903.0
1913-14	13,496	1948-49	16,125	1983-84	9,081.0
1914-15	8,318	1949-50	14,279	1984-85	11,104.0
1915-16	6,964	1950-51	13,411	1985-86	9,792.0
1916-17	11,194	1951-52	10,652	1986-87	8,369.5
1917-18	12,445	1952-53	16,020	1987-88	16,152.0
1918-19	17,825	1953-54	12,435	1988-89	16,155.5
1919-20	10,962	1954-55	6,446	1989-90	8,056.0
1920-21	16,452	1955-56	11,368	1990-91	5,882.0
1921-22	6,012	1956-57	22,819	1991-92	9,415.0
1922-23	16,950	1957-58	24,745	1992-93	12,096.0
1923-24	21,240	1958-59	38,797		
1924-25	29,395	1959-60	49,866		
1925-26	57,782	1960-61	38,906		
1926-27	73,843	1961-62	24,709		
1927-28	45,310	1962-63	16,959		
1928-29	53,007	1963-64	15,703		
1929-30	78,749	1964-65	23,553		
1930-31	70,855	1965-66	12,390		
1931-32	44,857	1966-67	5,670		
1932-33	49,786	1967-68	3,214		
1933-34	61,588	1968-69	1,852		
1934-35	66,842	1969-70	2,644		

^u Catches include the fresh bait pound harvest.

^v Catch includes total season, although referenced as only one year. Example: 1976 season includes catches from the fall of 1976 and spring of 1977. All of 1992-93 season catches occurred in 1993.

Table 2. Southeast Alaska region annual herring catch in tons by fishery type, 1960-61 through 1992-93 seasons.

Year ^a	Reduction	Winter Bait	Spawn on Kelp ^b	Sac Roe	Bait Pound	Total ^c
1960-61	36,790	2,116	0	0	0	38,906
1961-62	22,869	1,840	0	0	0	24,709
1962-63	13,765	3,172	22	0	0	16,959
1963-64	13,539	2,064	100	0	0	15,703
1964-65	21,397	1,957	199	0	0	23,553
1965-66	10,062	2,094	234	0	0	12,390
1966-67	2,918	2,422	330	0	0	5,670
1967-68	0	3,025	189	0	0	3,214
1968-69	0	1,816	36	0	0	1,852
1969-70	0	2,644	0	0	0	2,644
1970-71	0	3,324	0	1,691	0	5,015
1971-72	0	2,045	0	1,822	0	3,867
1972-73	0	3,954	0	2,353	0	6,307
1973-74	0	5,856	0	1,981	0	7,837
1974-75	0	5,910	0	2,075	0	7,985
1975-76	0	5,688	0	2,254	0	7,942
1976-77	0	6,409	0	2,231	0	8,640
1977-78	0	4,042	0	2,029	0	6,071
1978-79	0	3,485	0	3,047	0	6,532
1979-80	0	2,717	0	6,500	0	9,217
1980-81	0	1,671	0	6,722	0	8,393
1981-82	0	1,530	0	7,193	0	8,723
1982-83	0	1,169	0	8,713	21	9,903
1982-84	0	620	0	8,411	50	9,081
1984-85	0	1,431	0	9,636	37	11,104
1985-86	0	2,442	0	7,319	31	9,792
1986-87	0	2,347	0	5,957	65	8,369
1987-88	0	4,016	0	11,246	17	15,279
1988-89	0	3,116	0	12,970	66	16,152
1989-90	0	3,843	12.0	4,163	38	8,056
1990-91	0	3,273	13.6	2,514	81	5,882
1991-92	0	2,719	49.3	6,614	32.3	9,415
1992-93	0	1,122	19.4	10,955	* ^d	12,096

^a Catch includes total season, although referenced as only one year. Example: 1991 season includes catches from the spring of 1992.

^b A spawn-on-kelp pound fishery was implemented in the spring of 1990; prior catches were from the "wild" spawn-on-kelp fishery.

^c Includes spawn on kelp.

^d When number of permits is less than three, information is considered confidential.

Table 3. Herring spawning threshold levels for major herring stocks in Southeast Alaska and Yakutat.

Area	Threshold Level (tons)
Hoonah Sound	1,000
Yakutat Bay	1,000
Deer Island	2,500
Anita Bay	2,500
Port Camden	2,500
Hobart Bay/Port Houghton	2,000
Lisianski Inlet	2,500
Seymour Canal	3,000
Tenakee Inlet	3,000
Tongass Narrows and George and Carroll Inlets	3,500
Mcaraes Passage/Bocas de Finas	5,000
Kah Shakes and Cat Island	6,000
Lynn Canal	5,000
Sitka Sound	7,500
Other stocks not included above	2,000

Table 4. Summary of 1992-1993 season herring fisheries.

WINTER FOOD AND BAIT FISHERY

Opening	Date Closing	District	Area	Assessment 1991/92 (tons)	Quota ^a (tons)	Harvest (tons)	Percent Harvest (Quota)	Ex-vessel Value
1/12/93	2/28/93	3/4	Bocas de Finas/Meares Pass	12,350	1,362	629	11.0	\$163,540
1/12/93	2/28/93	10	Hobart Bay/Port Houghton	4,100	500		12.2	0
1/12/93	3/15/93	13	Lisianski Inlet	5,750	720	239	12.5	\$37,700
1/12/93	2/28/93	7A	Deer Island	2,050	200	8	10.0	\$2,106
1/12/93	3/15/93	13B	Necker Bay Sitka Test Fishery	2,000	200	176 70	10.0	\$45,760
Total				26,250	2,982	1,122	Bait Value	\$249,106

SAC ROE FISHERY

Date	District	Area	Gear	Assessment 1992 (tons)	Quota ^a (tons)	Harvest (tons)	Percent Harvest	Roe % (Quota)	Ex-vessel Value
3/27-4/3	13	Sitka	Seine	48,450	9,691	10,186	20.0	10.7	\$2,037,400
4/10-4/10	01	Cat Island	Gillnet	8,100	717 ^c	737	10.7	16.2	\$1,160,000
		Hobart Bay Test Fishery				32			
Total				56,550	10,408	10,955	Sac Roe Total		\$3,197,400

SPAWN ON KELP FISHERY

Date	District	Area	Gear	Assessment 1992 (tons)	Herring Quota ^a	Spawn-on-Kelp Harvest (tons) (Quota)	Percent Harvest (Quota)	Ex-vessel Value
4/17-4/28	103-60	Craig	Pound	12,350	240	5.2	1.9	\$156,400
4/26-5/3	113-55	Hoonah Sound	Pound	5,750	150 ^b	14.2	2.6	\$344,907
Total				18,100	390	19.4	Spawn-on-Kelp	\$501,307
Total Value								\$3,947,813

^a Quota based on previous year's escapement estimate.^b Pound quota set by Board of Fisheries at 150 tons of herring.^c Quota reduced by 150 tons as an allocation to Annette Island catch.

Table 5. Southeast Alaska winter food and bait herring harvest in tons, by fishing season and month, 1971-72 through 1992-93.^a

Year	Sept	Oct	Nov	Dec	Jan	Feb	Mar	Total ^b
1971-72	6.0	6.1	358.0	275.5	291.7	280.1	827.8	2045.2
1972-73	.9	252.4	374.3	586.8	847.3	1174.5	717.8	3954.0
1973-74	98.8	891.7	1395.0	719.2	919.3	1797.9	34.0	5855.9
1974-75		1153.2	1711.1	1284.5	587.4	665.3	508.9	5910.4
1975-76		1435.9	1825.4	406.0	779.0	1076.9	164.9	5688.1
1976-77		780.0	2195.7	1474.3	1022.3	937.1		6409.4
1977-78		1449.4	798.6	365.3	539.0	890.0		4042.0
1978-79			2394.0			1091.0		3485.0
1979-80		1631.0		1088.0				2717.0
1980-81					1051.0	620.0		1671.0
1981-82			90.0		1400.0	40.0		1530.0
1982-83		98.0	551.0			520.0		1169.0
1983-84						620.0		620.0
1984-85					1431.0			1431.0
1985-86					2442.0			2442.0
1986-87					2347.3			2347.3
1987-88					4016.0			4016.0
1988-89					3116.0			3116.0
1989-90					3843.0			3843.0
1990-91					3273.0			3273.0
1991-92					2719.0			2719.0
1992-93					834.3	187.6	100.1	1122.0

^a Figures do not include herring bait pounds.^b Totals include any test fisheries.

Table 6. Annual Southeast Alaska sac roe herring harvest by area, in tons, 1971 to 1993.

Year	Sitka Sound	Seymour Canal	Lynn Canal	Kah Shakes	Other Areas	All Areas ^f
1971	748	35	688	0	220 ^a	1,691
1972	602	495	524	0	201 ^b	1,822
1973	597	506	798	0	452 ^c	2,353
1974	681	904	396	0	0	1,981
1975	1,517	0	558	0	0	2,075
1976	800	195	630	426	203 ^d	2,254
1977	0	485	926	820	0	2,231
1978	175	729	954	171	0	2,029
1979	2,250	269	0	528	0	3,047
1980	4,385	0	975	1,140	0	6,500
1981	3,506	615	761	1,840	0	6,722
1982	4,363	0	551	2,279	0	7,193
1983	5,463	0	0	3,250	0	8,713
1984	5,711	518	0	2,182	0	8,411
1985	7,475	0	0	2,161	0	9,636
1986	5,443	339	0	1,537	0	7,319
1987	4,216	302	0	1,439	0	5,957
1988	9,573	586	0	1,087	0	11,246
1989	11,831	547	0	592	0	12,970
1990	3,804	359	0	0	0	4,163
1991	1,838	0	0	422	238 ^e	2,514
1992	5,368	0	0	1,246 ^e	0	6,614
1993	10,186	0	0	737 ^e	32 ^f	10,955

^a Washington Bay (76 tons), Lisianski Inlet (100 tons), and Yakutat Bay (44 tons).

^b Lisianski Inlet.

^c Yakutat Bay (158 tons), Helm Bay (194 tons), and Lisianski Inlet (100 tons).

^d Helm Bay (26 tons), Chaik Bay (40 tons), Pybus Bay (22 tons), Gambier Bay (8 tons), and Kasaan Bay (107 tons).

^e Cat Island, Ketchikan area

^f Includes test fisheries.

Table 7. Fresh herring bait pound catches by area, 1983-1993.

Catch by Area in Tons							Total
Year	Scow Bay	Farragut Bay	Sitka Sound	Tee Harbor	Indian Cove	Lisianski ^a Inlet	
1983	7	14	0	0	0		21
1984	3	12	35	0	0		50
1985	4	0	33	0	0		37
1986	0	5	26	0	0		31
1987	0	3	62	0	0		65
1988	0	0	17	0	0		17
1989	0	0	66	0	0	0	66
1990	0	0	38	0	0	0	38
1991	0	16	65	0	0	0	81
1992	0	15	17	0	0	0	32
1993	0	0	^{a,b}	0	0	0	^{a,b}
10 yr.avg.	1.4	6.5	35.9	0	0	0	43.8

^a Pounds were allowed by regulation in Sitka Sound in 1983 and Lisianski Inlet in 1989.

^b When number of permits is less than three information is considered confidential.

Table 8. Herring spawn-on-kelp subsistence harvests, 1966 to 1993.

Year	Permits Issued	Permits Returned	Total Pounds Harvested ^a
<u>Craig/Klawock/Hydaburg</u>			
1966	145	86	5,200
1967	201	130	3,368
1968	130	95	2,260
1969	80	61	2,858
1970	103	60	3,213
1971	81	66	2,643
1972	102	44	4,250
1973	31	9	1,209
1974	159	39	3,087
1975	92	34	1,640
1976	54	12	1,728
1977	34	7	352
1978	109	83	3,521
1979	102	81	1,268
1980	309	189	3,721
1981	157	87	6,148
1982	187	81	5,485
1983	302	189	5,945
1984	261	159	4,972
1985	233	168	9,553
1986	241	142	5,565
1987	263	158	15,038
1988	191	124	6,354
1989	221	117	11,699
1990	245	172	10,158
1991	274	142	12,627
1992	407	304	16,677
1993	290	167	5,592

Table 8. (Continued).

Year	Permits Issued	Permits Returned	Total Pounds Harvested ^a
<u>Kah Shakes</u>			
1978	11	8	122
1979	16	6	0
1980	33	24	75
1981	6	5	12
1982	30	18	342
1983	33	24	103
1984	14	6	116
1985	19	10	0
1986	5	2	0
1987	5	4	0
1988	6	6	68
1989	10	9	0
1990	7	0	0
1991	4	4	60
1992	8	7	75
1993	8	3	0
<u>Ship Island</u>			
1992	1	1	45
1993	0	0	0
<u>West Behm Canal</u>			
1993	2	2	180
<u>Sitka Area</u>			
1979	21	10	137
1980	19	13	145
1981	26	19	192
1982	36	25	886
1983	69	48	1,991
1984	50	40	1,281
1985	71	45	3,963
1986	90	82	3,929
1987	97	59	8,827
1988	127	77	6,146
1989	70	53	962
1990	71	63	4,022
1991	75	61	5,925
1992	118	83	7,484
1993	61	47	4,108

^a The total harvest was extrapolated from harvests reported on returned permits to include an estimate of unreported harvests.

Table 9. Macrocyctis kelp harvested for the spawn-on-kelp fishery.

Year	Prince William Sound	Hoonah Sound	Craig
Prior to 1984	5-15 Annually		
1984	61.0		
1985	11.0		
1986	16.0		
1987	22.5		
1988	38.3		
1989	0		
1990	30.5	3.9	
1991	31.4	3.3	
1992	32.8	3.8	7.8
1993	34.4	2.0	3.6

* No transport of kelp occurred in 1989 to the Prince William Sound pound fishery because of the oil spill.

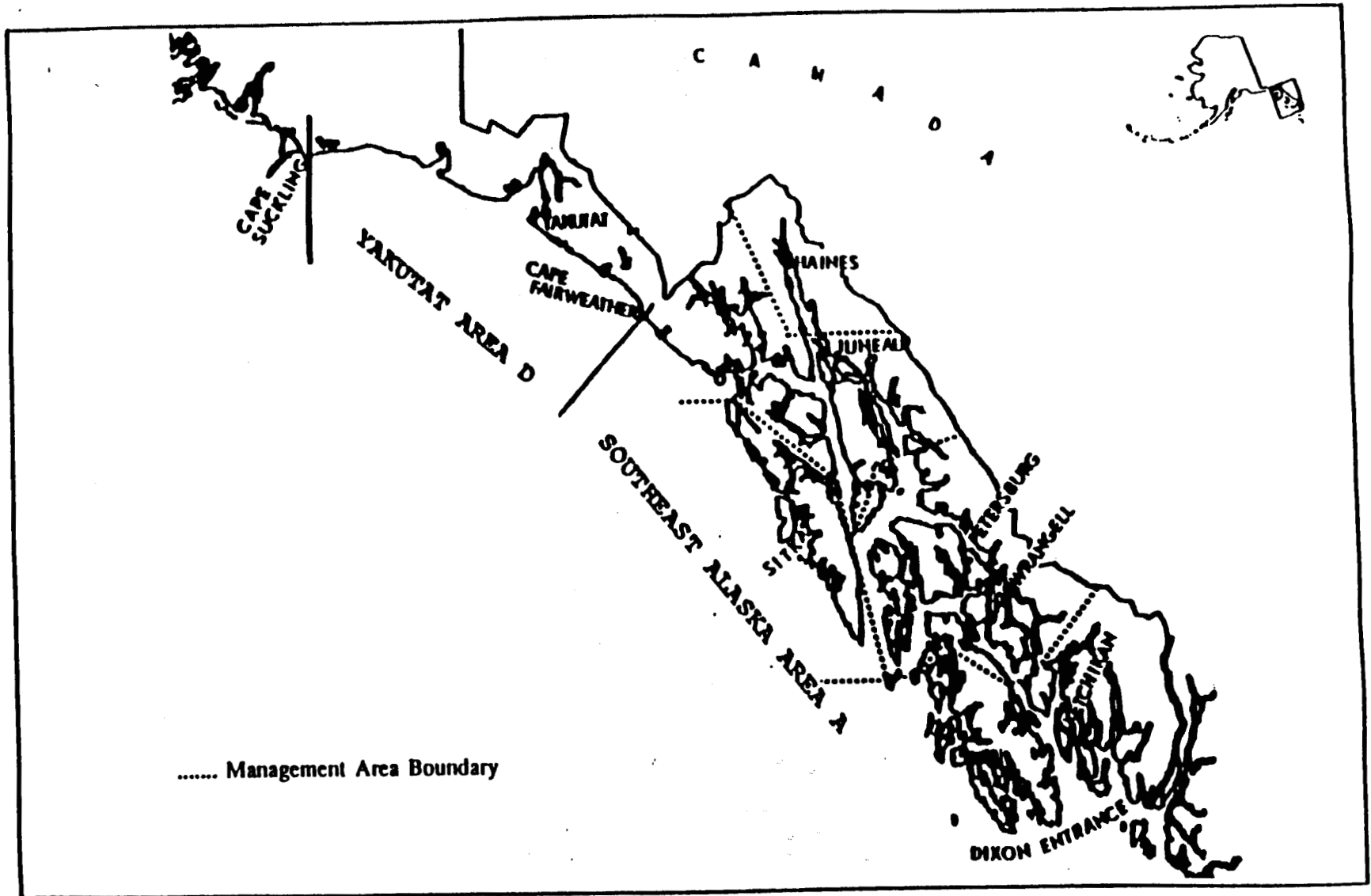


Figure 1. Southeast Alaska Region (Region 1) Herring Registration Areas (Southeast Alaska Area A and Yakutat Area D) and Management Area Boundaries.

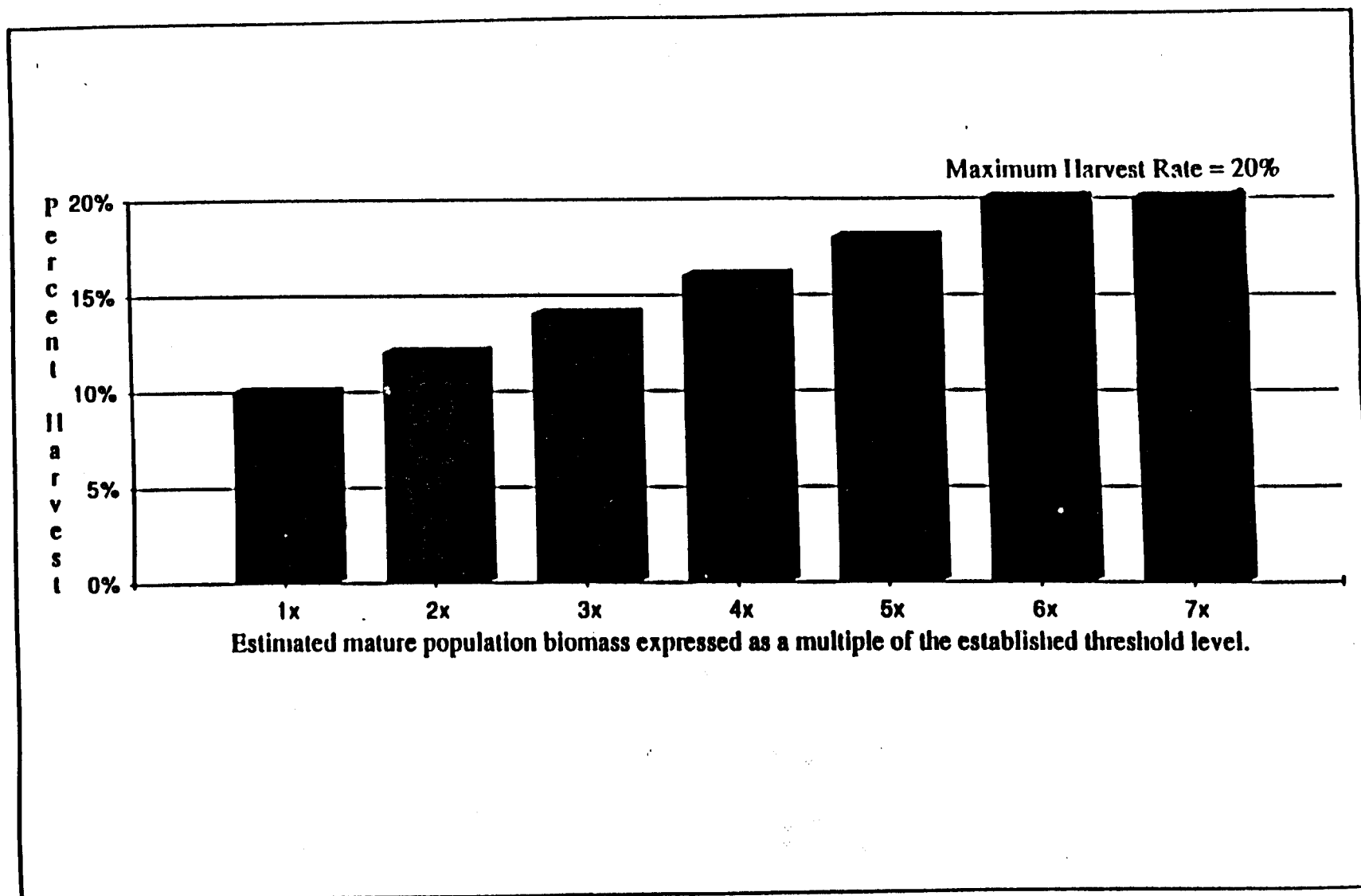


Figure 2. Generalized harvest strategy for Southeast Alaska herring stocks showing allowable percent annual harvest related to estimated biomass of mature stock expressed as a multiple of the established harvest threshold level.

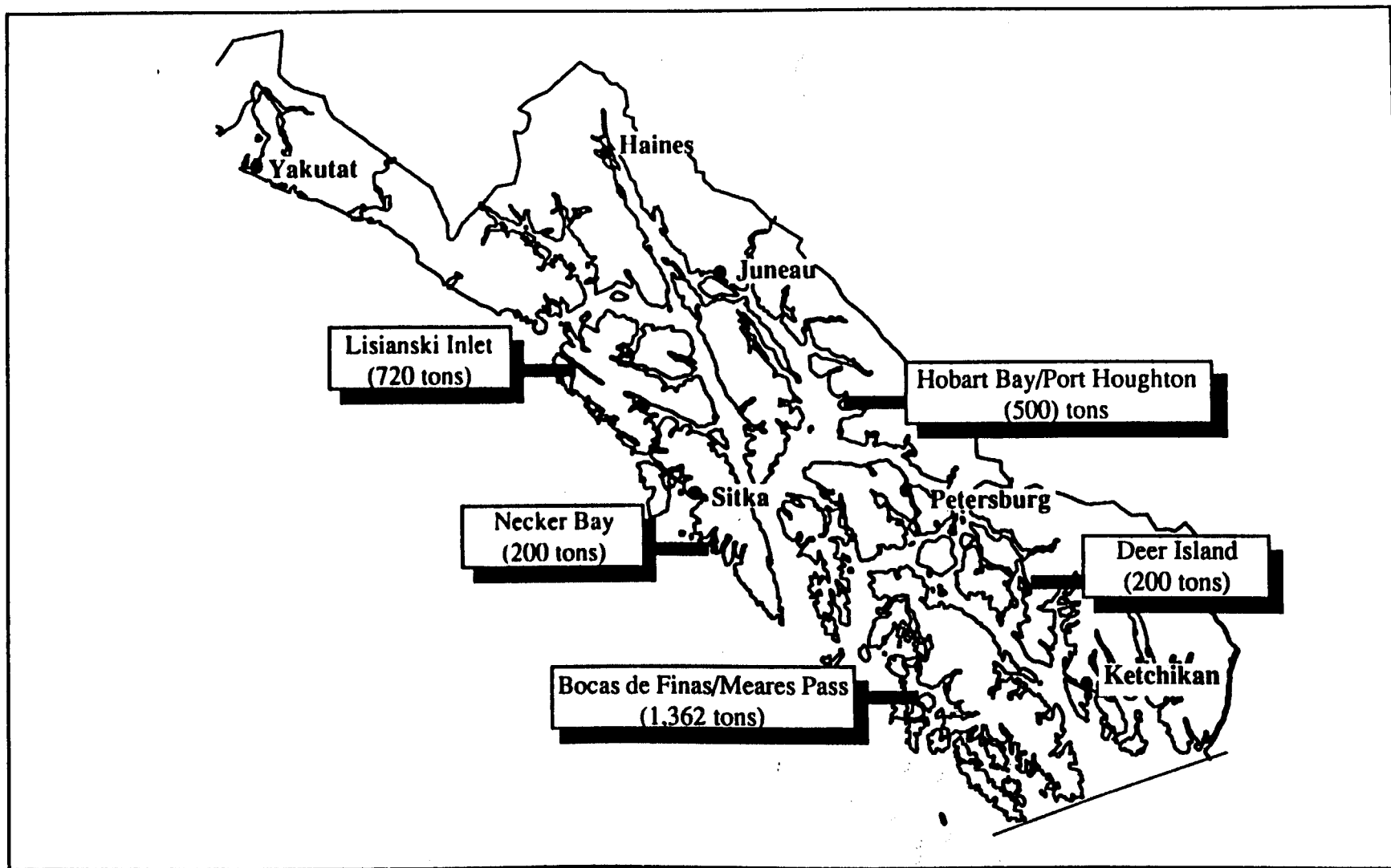


Figure 3. Food and bait fishing areas, 1993.

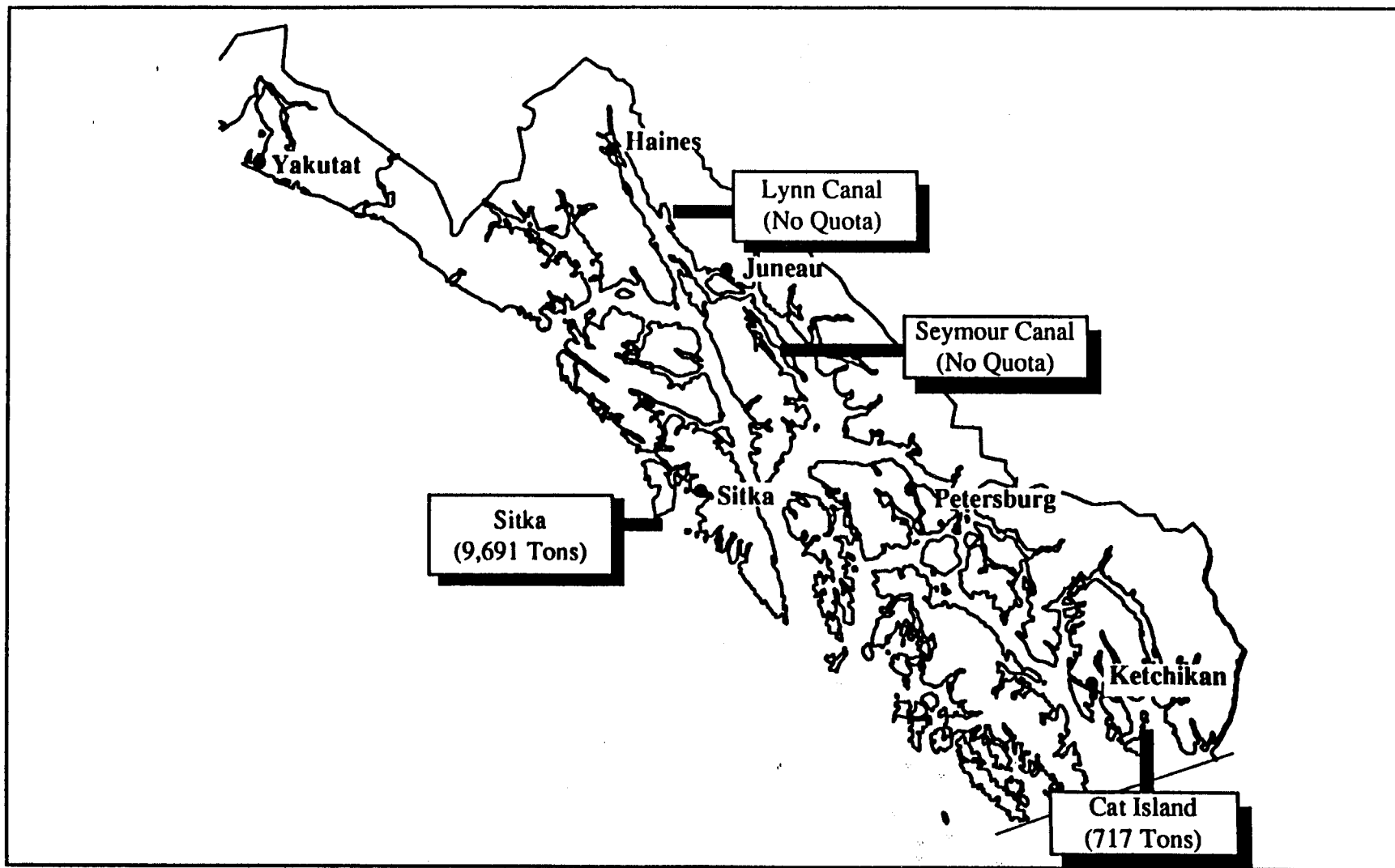


Figure 4. Sac Roe Fishing Areas with quotas, 1993.

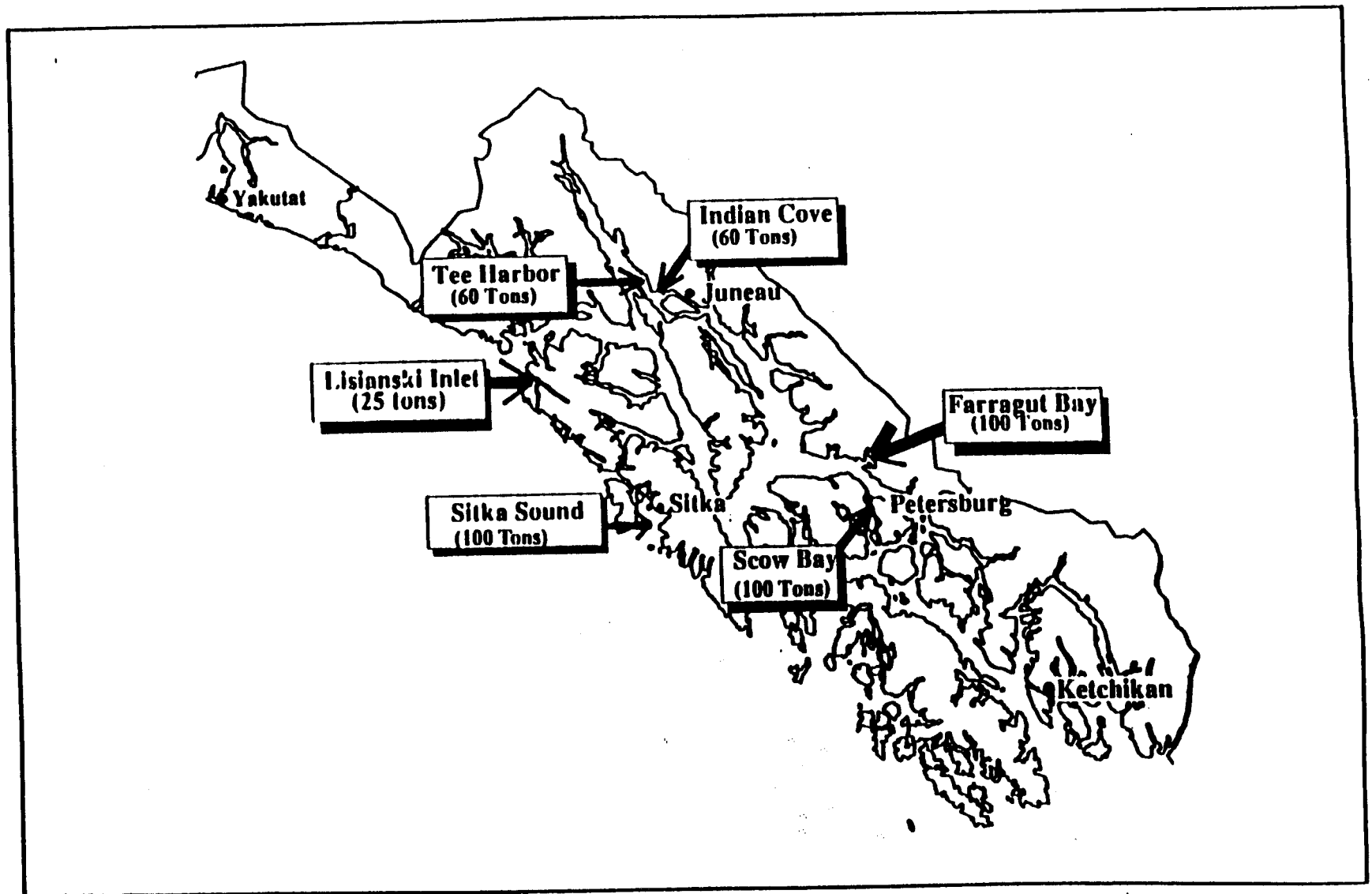


Figure 5. Fresh bait pounds - Southeast Alaska.

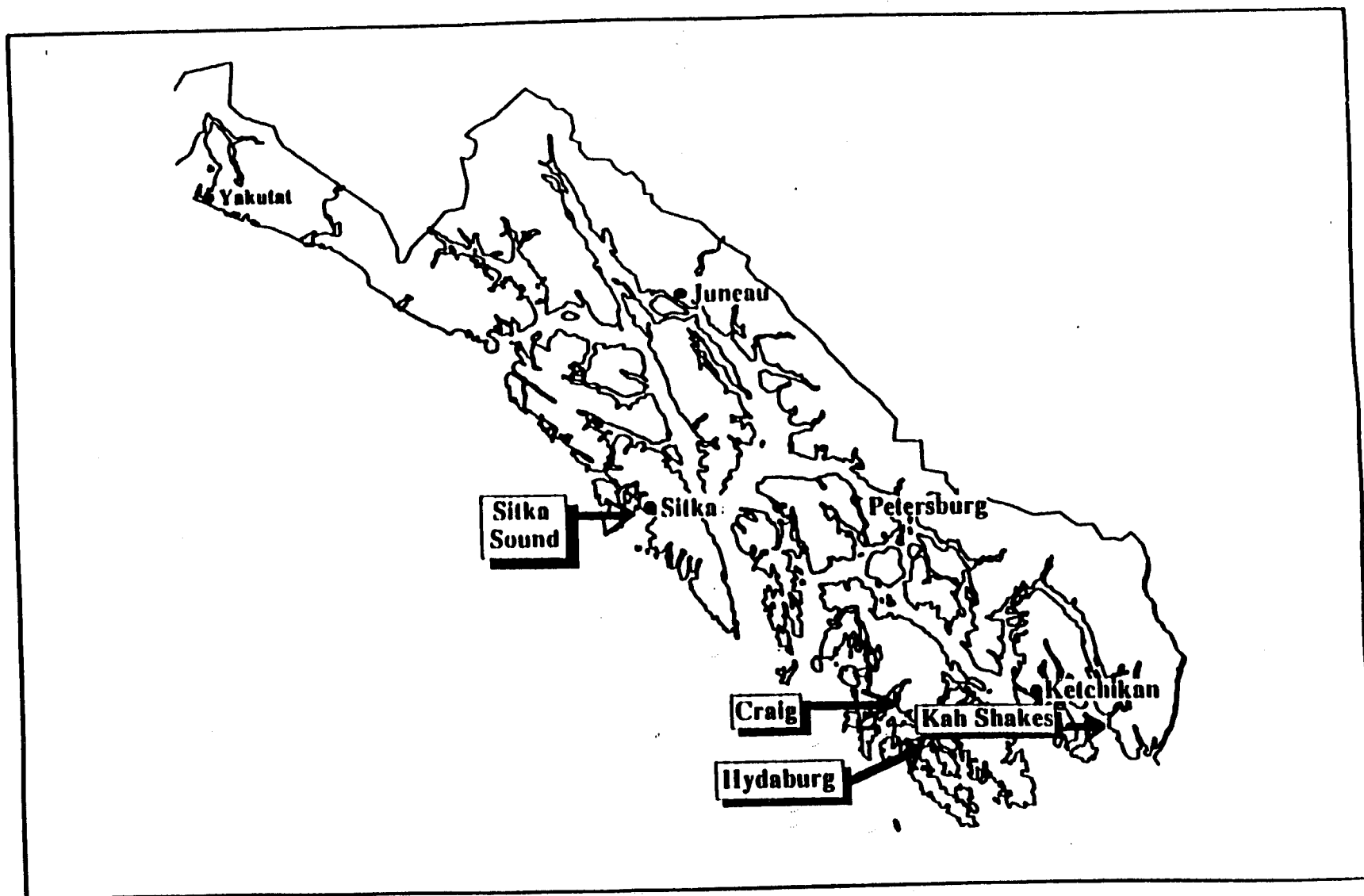


Figure 6. Major Southeast Alaska spawn-on-kelp subsistence fishery areas.

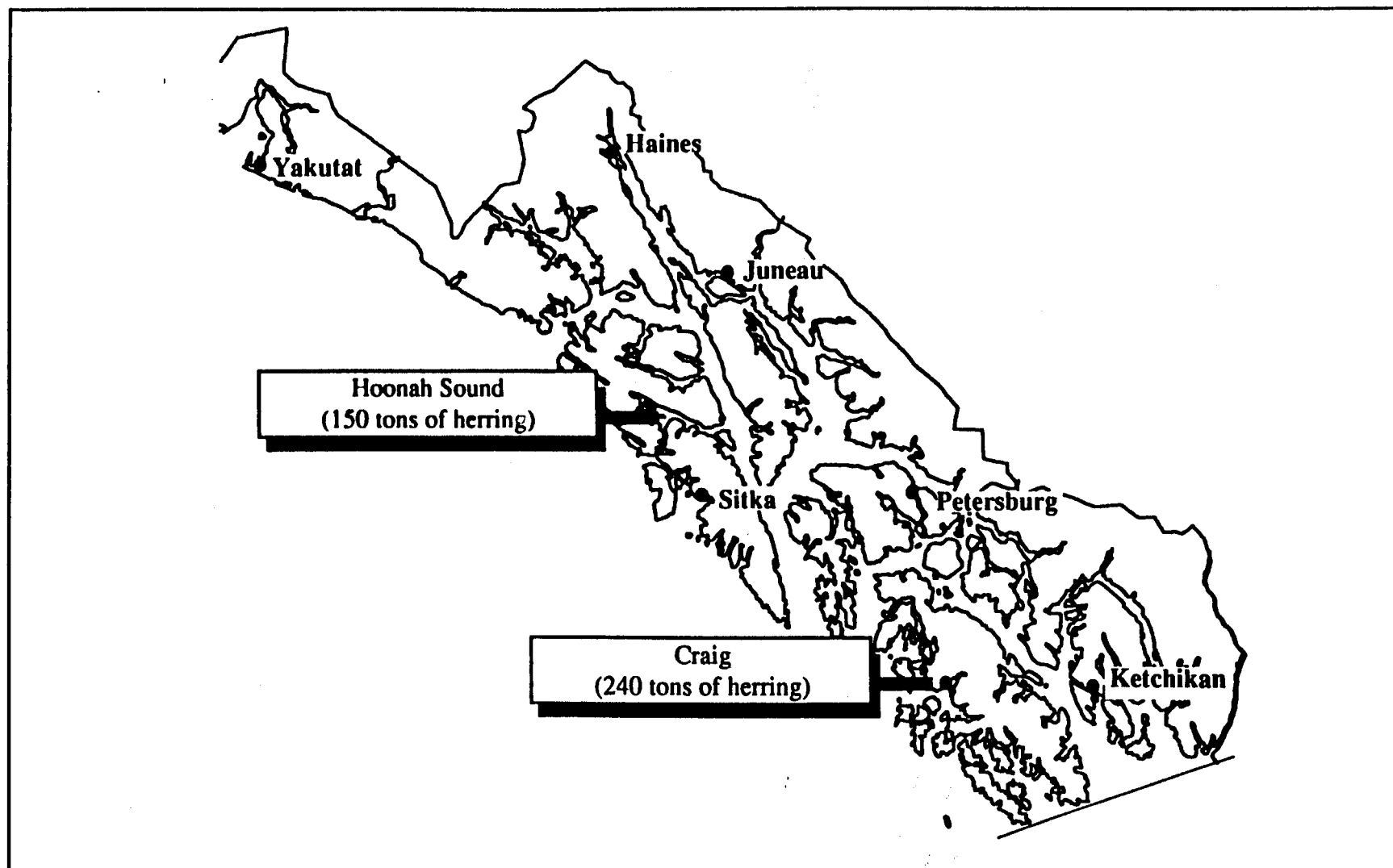


Figure 7. Spawn-on-kelp pound fishing areas with herring quotas, 1993.

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